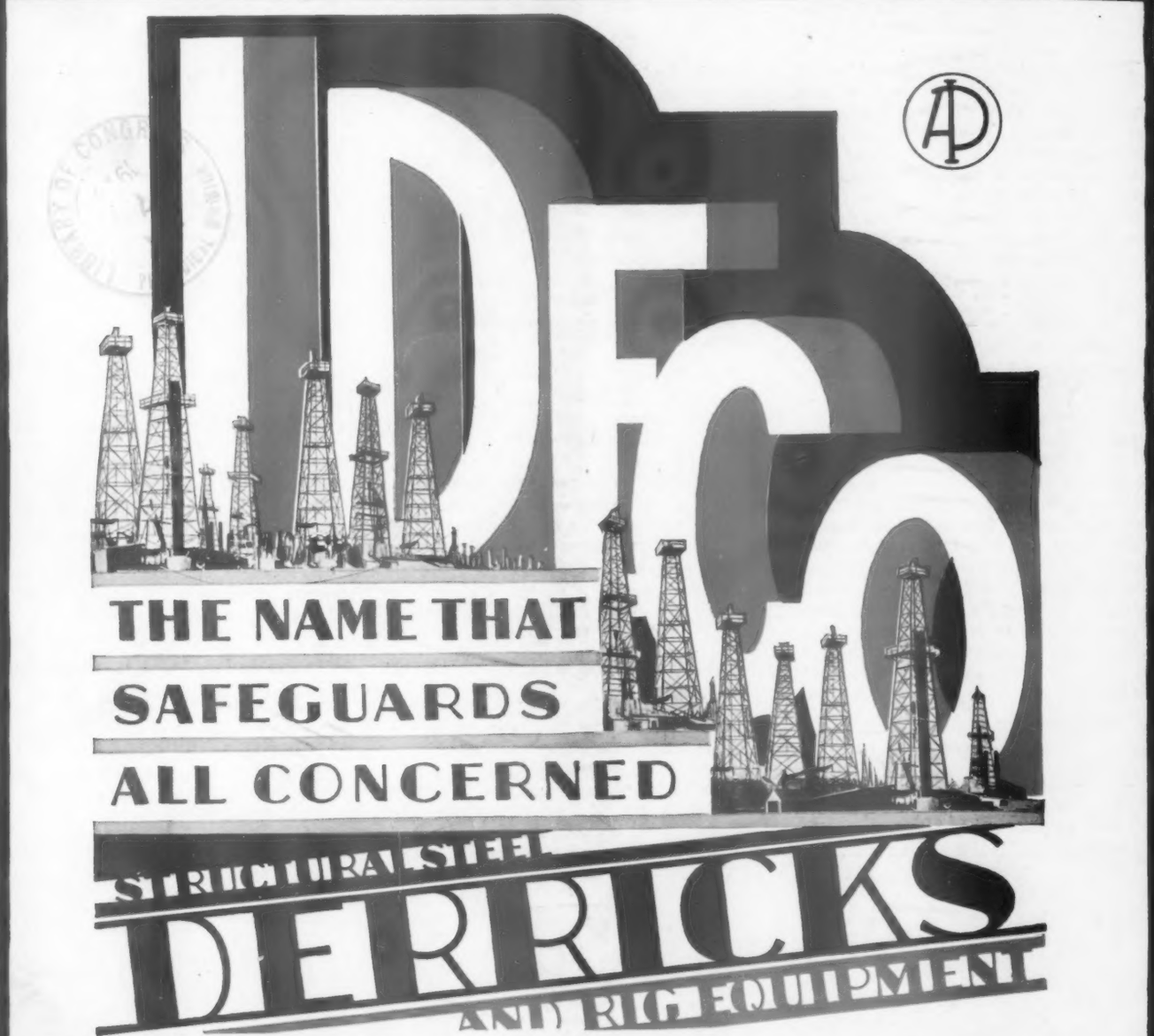
10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

May 17, 1929 **Volume 53. No. 9**



The International Derrick & Equip. Co. **Columbus, Ohio—Los Angeles, Cal.**

Branches and stocks—New York, N. Y.; Detroit, Michigan; Dallas, Fort Worth, San Antonio, Houston, Mexia, Wichita Falls, Pyote, Odessa, Amarillo, Luling, Borger, Corsicana, Pampa, Panhandle, Big Spring, Trent, Orange, Hebbronville, Texas; Shreveport, Oil City, Lake Charles, Louisiana; El Dorado, Smackover, Arkansas; Wichita, El Dorado, Valley Center, Kansas; Tulsa, Oklahoma City, Tonkawa, Drumright, Shidler, Okemah, Seminole, Allen, Sasakwa, Maud, Wewoka, Oklahoma; Los Angeles, Torrance, Bakersfield, Taft, California; Maracaibo, Venezuela.

Export Representation—74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California.

607

Du Pont designs four primers for the petroleum industry

IN no other industry are the problems of corrosion so serious. No one primer, however good for a particular use, can be applied to all the diverse demands of the industry. But, with the assistance of maintenance engineers, superintendents and master painters of the petroleum industry, du Pont chemical engineers have worked out the following four primers designed to meet requirements of oil field exposure:

Du Pont No. 45 Kromate Metal Primer

Particularly adapted to surfaces subject to continuous or intermittent contact with water.

The pigment portion is made up of the best rust inhibitive combination known, 75% of which is basic lead chromate. Dries to a hard, dull film that hugs the surface, giving the best adhesion to finishing coats. Sets up free from dust in three to five hours and dries hard in eighteen to twenty-four hours. Whereas many primers are impaired by moisture condensation and dew, du Pont No. 45 Kromate Metal Primer sets up so rapidly that it is not affected. Spreading capacity between 500 and 700 square feet to the gallon brushed or sprayed.

Du Pont No. 44 Aluminum Paint Primer

An undercoating for structural steel and tankage.

A longer oil product with a pigment made up of basic lead chromate and sublimed blue lead with 10% asbestine to insure proper keeping in the package. While it is designed specifically as a primer for finishing coats of aluminum on structural steel and tankage, it is suitable for any type of oil finish coats.

Neutral plum color which will not show laps or breaks in the finishing coat, as frequently happens with red oxides, red lead, and basic chromate pigment when used alone. Sets up in from four to six hours and dries hard in eighteen to twenty-four hours.

Not affected by condensation or dew. Keeps well; settles very little. Can be either brushed or sprayed. Will cover from 500 to 700 square feet to the gallon. Dries to a tough, hard, elastic film, with a surface that gives the greatest adhesion to finishing coats. Maximum durability and rust inhibition. Sufficiently elastic to meet the usual extremes of contraction and expansion found in the oil fields.

Du Pont No. 7 Primer

A good general purpose metal primer.

No. 7 Primer has, for a portion of its pigment content, a rust inhibitive pigment and contains a vehicle long in oil. The film, when dry, is highly impervious to the passage of moisture and gases, and is sufficiently flexible to withstand the extremes of expansion and contraction. Dark reddish brown in color. Sets up dust free in five to six hours and dries hard in twenty-four to thirty-six hours. Approximate spreading capacity 500 square feet per gallon one coat. Can be used without thinning.

Brush and spray application. It has the advantage of being low in price and at the same time provides strong rust inhibition and anti-corrosive properties.

Du Pont No. 41 Black Metal Primer

Especially recommended for priming tank cars which are to be finished in high-gloss black.

A treated oil vehicle in combination with magnetic black oxide pigment reinforced with basic chromate and sublimed blue lead. This pigment combination renders the film highly resistant to electrolytic action, insuring at the same time other anti-corrosive and rust inhibitive characteristics so necessary in oil field exposures. Sets up in from four to six hours and dries hard in twenty-four hours.

Call in the du Pont engineers to study your particular problems.

These men have spent years in studying protective painting for the petroleum industry. Use their knowledge for the solution of your problems. At the same time send for technical bulletins which describe the du Pont products designed specifically for the industry.

DU PONT

REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC.

Petroleum Sales Department

Parlin, New Jersey

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1897.

4 FEATURES OF GASO PUMP, FIG. 1508

Gears Run on Massive TIMKEN BEARINGS

1 Main and Pinion Shaft bearings are Timken Tapered Roller Bearings.

2 Main and Pinion Gears of continuous tooth Herringbone construction.

3 H-Column Connecting Rod, with babbitt-lined, removable bronze shell at crank end.

4 Pump is fully enclosed, dust-proof, and entirely self lubricated.

A factor in the outstanding efficiency and durability of Gaso Fig. 1508 Pump is the Timken Tapered Roller Bearing equipment on both main and pinion gears.

In this pump, friction and wear have been reduced to the minimum. Users are obtaining notable service as the result. Ask for complete information.

GASO PUMP & BURNER MFG. COMPANY
TULSA, OKLA.
210 Petroleum Bldg., Fort Worth, Texas.
535 Broadway, New York, N. Y.

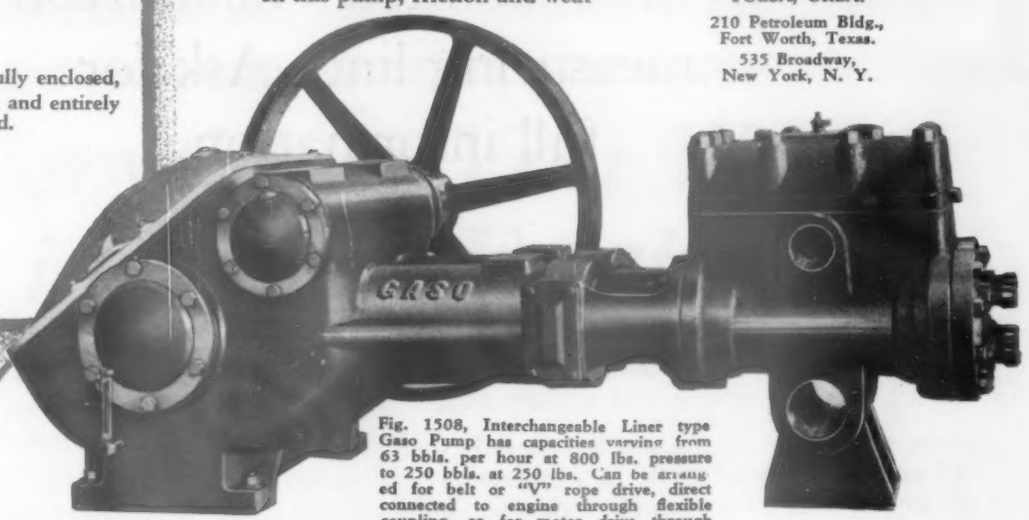


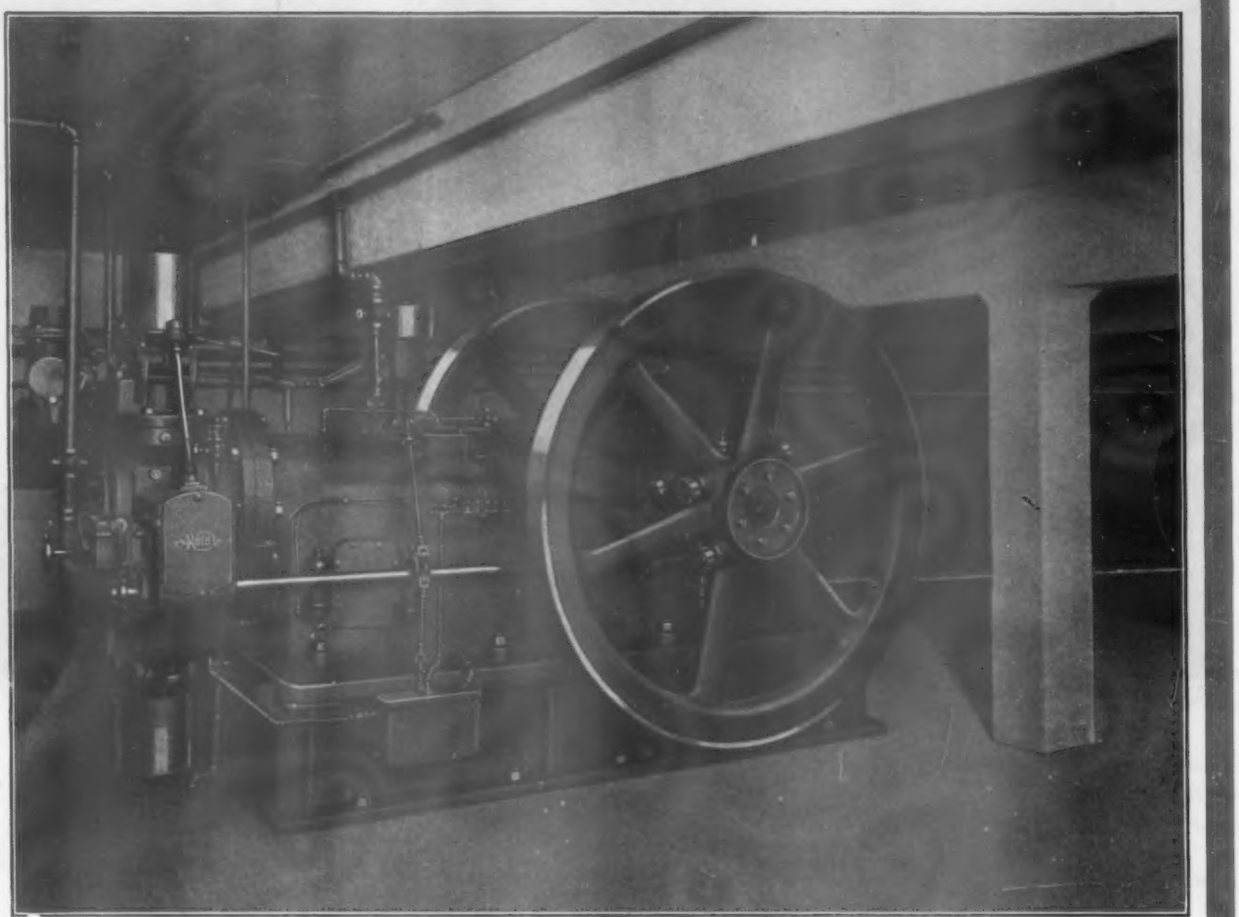
Fig. 1508, Interchangeable Liner type Gaso Pump has capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. at 250 lbs. Can be arranged for belt or "V" rope drive, direct connected to engine through flexible coupling, or for motor drive through silent chain or reduction gears.

GASO PUMPS
for every oil industry need

You may not be able to tell the depth of a *water* well by the length of the handle on the pump — but can tell the depth of an *oil* well — quickly, accurately, economically — by the patented Halliburton measuring line. Ask for full information.

HALLIBURTON
OIL WELL CEMENTING COMPANY
DUNCAN, OKLAHOMA

Say you saw it in The OIL WEEKLY



Everything You Want in a Gas Engine

Here is a sturdy, rugged prime mover of the slow speed, heavy duty type—capable—reliable—and economical.

Observe one of these engines in operation—notice the smoothness with which it operates—mark the ease with which it handles its load—and note particularly how steadily and quietly it runs.

Let us tell you in full detail, the many advantages of Reid Four Cycle Gas Engines—write directly to us or to any of the branches or distributors listed below.

JOSEPH REID GAS ENGINE COMPANY
OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES—Marietta, Newark, and Logan, ,Ohio; Charleston, W. Va.; S. R. Shoup, 724 Board of Trade Building, Los Angeles, California.
BRANCH SHOP—Tulsa, Oklahoma.
EXPORT SALES REPRESENTATIVE—Oil Field Equipment Co., Inc., 30 Church Street, New York City.

DISTRIBUTORS—Frick-Reid Supply Corp., Pittsburgh, Pa., and Tulsa, Oklahoma, Distributors for Bradford and Pittsburgh, Pa., Kentucky, Oklahoma, Kansas, Texas, Arkansas, Louisiana, and Wyoming; R. B. Moore, Bolivar, N. Y.; distributed in California by The Republic Supply Co. of California, office address 2122 East Seventh St., Los Angeles, Cal.

This GENERATOR UNIT will go *Anywhere*

Now you can't go so far into the wilderness that you can't have electric power. The CLARK Generator Unit is easily transported, quickly set up, and operates efficiently on gas or gasoline.

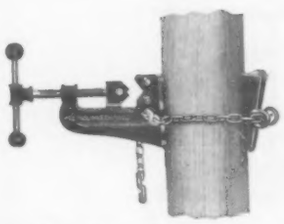
Durable construction, complete enclosure, automatic lubrication and perfect balance minimize upkeep expense. The unit consists of Generator—75 k.v.a., 3-phase, 60-cycle, 400 r.p.m.—direct connected to CLARK 4-cylinder gas or gasoline engine—90 h.p. at 400 r.p.m.

Complete data on request. Clark Bros. Company, Olean, N. Y. Export Office: 150 Broadway, New York City. Branches and Warehouses: 125 W. First St., Tulsa; McCamey and Sweetwater, Texas; Artesia, N. M. California: Smith Booth, Usher Company, 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.

CLARK

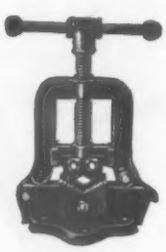
Say you saw it in The OIL WEEKLY

A Letter from Harry G. Nye



Nye Post Chain Vise

Price, complete with 40" Steel Chain . . . . . $6.18 Net



Nye Self-Locking Vise

No.	Pipe	Vise, Complete Net
00	⅛ to 2 "	$2.82
10	⅛ to 2½"	3.34
20	¼ to 3½"	5.00
30	½ to 4½"	7.33

Nye Drop Forged Pipe Cutter

No. 1-A	⅛ to 1¼"	$2.75 net
No. 2-A	⅛ to 2"	3.30 net
No. 3-A	1 to 3"	5.50 net

Nye Saunders Pipe Cutter

No. 1	⅛ to 1"	$2.00 net
No. 2	1 to 2"	3.00 net
No. 3	2 to 3"	7.33 net
No. 4	2½ to 4	12.00 net
No. 5	4 to 6"	18.67 net

TO THE OIL MEN OF THE U. S. A.

Fellow Citizens:

A banker friend of mine—I never tried to borrow any money from him, that's how we happen to be friends—has asked me to write a few words in the banker's defense, if any. He says that bankers are very much misunderstood, although none of them ever spoke to me yet so that I didn't know what he meant.

A bank is a place where you put your money, so you can borrow it back again when you need it, if the bank still has it, and will let you have it. The bank pays you a certain per cent, if you leave it there long enough, and charges you a certain per cent, if you bring it back soon enough. But if you think it's the same per cent, you'd be surprised.

When you deposit your money the banker gives you a little book in which is set down how much you have put in. But this book doesn't mean what you think. It doesn't promise a darn thing. A bank never breaks any promises, because it is careful *never to make any*. This book is just to show you how much you lose if the bank busts.

Of course, when you go back to borrow money at the bank, the money the banker lets you have, if by any chance he does, is not the same actual money you recently deposited. The banker has already lent that to somebody else. What he lets you have is the money some other fellow just brought in. And so on.

You remember the man in the circus who used to keep seven balls in the air and one in his hand? Well, that's where the banker got his big idea. He always has some money on hand, but the other seven-eighths is somewhere else. The banker simply figures that all of us won't all want all our money all at the same time. But, darn it, sometimes we do.

However, a bank is one of the two best ways to save money. The other is to buy Nye Tools; they work so much faster and easier and last so much longer than all others that they save an oil man a lot of money.

Bank on us,

HARRY G. NYE.

Otherwise Known As

The Nye Tool & Machine Works

4120-30 Fullerton Avenue

Chicago, Ill.

(Copyright, 1929, by Harry G. Nye. All rights reserved.)

NYE (Toledo Type) Chasers Fit Nos. 1, 1A and 2 NYE (Toledo Type) Stocks

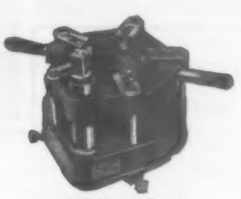
Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1,	1" to 1½"	$ .75 per set net
No. 1,	2"	$1.25 per set net
No. 2,	2½" to 4"	$3.60 per set net

The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.

No. 1 Nye Receding Pipe

Threader, complete . . . . $9.60 net
West of Rocky Mountains $10.80



NYE NO. 2
(Toledo Type)
Geared Threading Device Improved

Capacity 2½ in. to 4 in. inclusive. This tool has the same rugged construction as the No. 1 and No. 1A Nye Receding stocks. A ratchet handle and a spider hub-threaded for 1-inch pipe is furnished as standard equipment.

Net price complete $50.00
West of Rocky Mountains . . . 55.00

The No. 1A is the same as the No. 1, except that it is equipped with a ratchet for work where space is restricted.

No. 1A Nye Receding Pipe

Threader, complete . . . . $12.00 net
West of Rocky Mountains $13.50

REDUCING OIL EVAPORATION BY REFLECTION

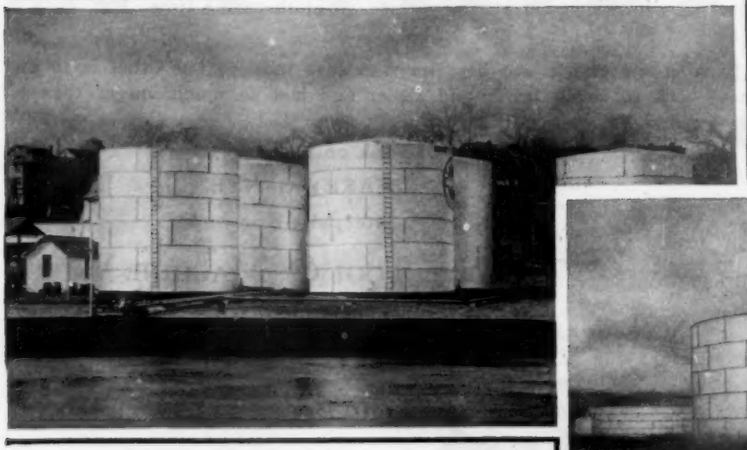
AS a practical paint for oil storage tanks Aluminum Paint has a record of proven efficiency.

Its reflectivity is lasting—for its bright smooth surface is not easily discolored—even by smoke and fumes. So month after month it continues to act as a conserver of oil, reflecting the sun's rays, keeping tank interiors cool and reducing loss of oil by evaporation.

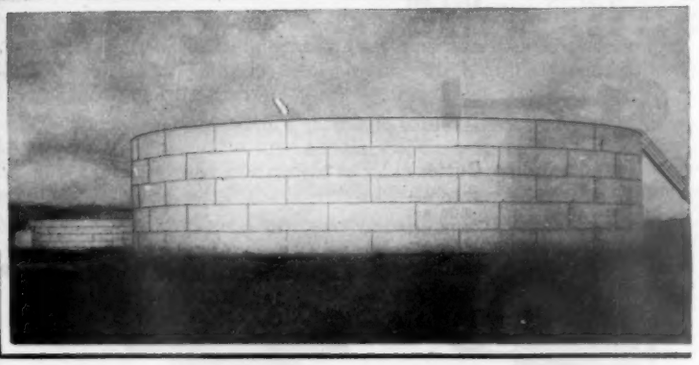
Aluminum Paint is easy to apply. It costs no more than other paints. It spreads further, lasts longer—and stands alone as a protective covering that is resistant to the action of hydrogen sulphide.

Write for the booklet, "Aluminum Paint, the Coat of Metal Protection."

ALUMINUM COMPANY OF AMERICA
2419 Oliver Building, Pittsburgh, Pa.
Offices in 18 Principal American Cities



Fuel oil is stored and protected in these attractive tanks belonging to the Holmes Fuel Oil Company of Passaic, N. J.



Oil tanks of the Gypsy Oil Company where Aluminum Paint guards against evaporation and loss.

ALUMINUM PAINT
"IT LEAFS"

TRADE ALBRON MARK

The pigment base for the better grades of Aluminum Paint is ALBRON made of pure ALCOA Aluminum. For extra durability and complete opacity be sure to specify ALBRON pigment.

Say you saw it in The OIL WEEKLY

TIME

THE GREATEST PROFIT-TAKER IN THE OIL FIELDS

J.S. ABERCROMBIE INSIDE CUTTING TOOL

Every driller and owner knows that the sooner a well is on a pipe line the greater the profits will be. They also know that delays and interrupted production are no boon to profits and that decreased production, due to weakening sands, is a direct loss.

When these mishaps occur there is no time to be lost in correcting them. To spend days on a fishing job or whipstocking is to lose time whose minutes are as valuable as the oil your well is not producing.

The J. S. Abercrombie Cutting Tools in the hands of our experienced operators are available on a moments' notice. These men arrive fully equipped for work and it is a matter of only a short time before the well is back on the line.

When deeper sands are necessary, by use of the Abercrombie Cutting Tool pipe, liner, and screen can be removed, leaving hole clean and ready for additional drilling without damage to the casing seat.

Let us give you an estimate of the cost and how much time we can save you on your cutting jobs.

ABERCROMBIE

RED BALL SERVICE

Long Distance 200—Fairfax 5317

Twelve skilled operators—all practical drillers with years of cutting experience are ready to start serving you at your command.

Abercrombie Tools are made in all sizes—specify inside diameter of casing when ordering our services.

J. S. ABERCROMBIE Co.

616-18 West Bldg. Houston, Texas

Say you saw it in The OIL WEEKLY

Prestolith

BRAND REG. U.S. PAT. OFF.

SPEED

Coupled With *SAFETY*

Prestolith
Velo Cement

Your guarantee of speed and safety.

These are the facts: Prestolith Velo Cement is safe and fast, because:

Prestolith Velo Cement mixed with 5.6 gallons of water per sack will give a *24-hour strength of 2700 pounds.* Portland Cement, when mixed with 5.6 gallons of water per sack, ordinarily produces in 10 days a strength of from 800 to 1600 pounds. And with Prestolith Velo Cement no admixtures or accelerators are required.

The conclusion is: Wherever speed and permanence are required, either in cementing oil wells, lining reservoirs, laying derrick foundations or engine bases, Prestolith Velo Cement will do the job better, faster, and more permanently!

Write for complete literature.

MISSOURI PORTLAND CEMENT CO.

ST. LOUIS KANSAS CITY MEMPHIS

Manufacturers of "Red Ring" Portland Cement and "Prestolith" brand of Velo Cement. Producers of sand, gravel and Bethany Falls crushed stone.

Say you saw it in The OIL WEEKLY

WELDED

STANDARD PIPE

CASING

TUBING

LARGE O. D. PIPE

LINE PIPE

DRIVE PIPE

DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

SEAMLESS

CASING

TUBING

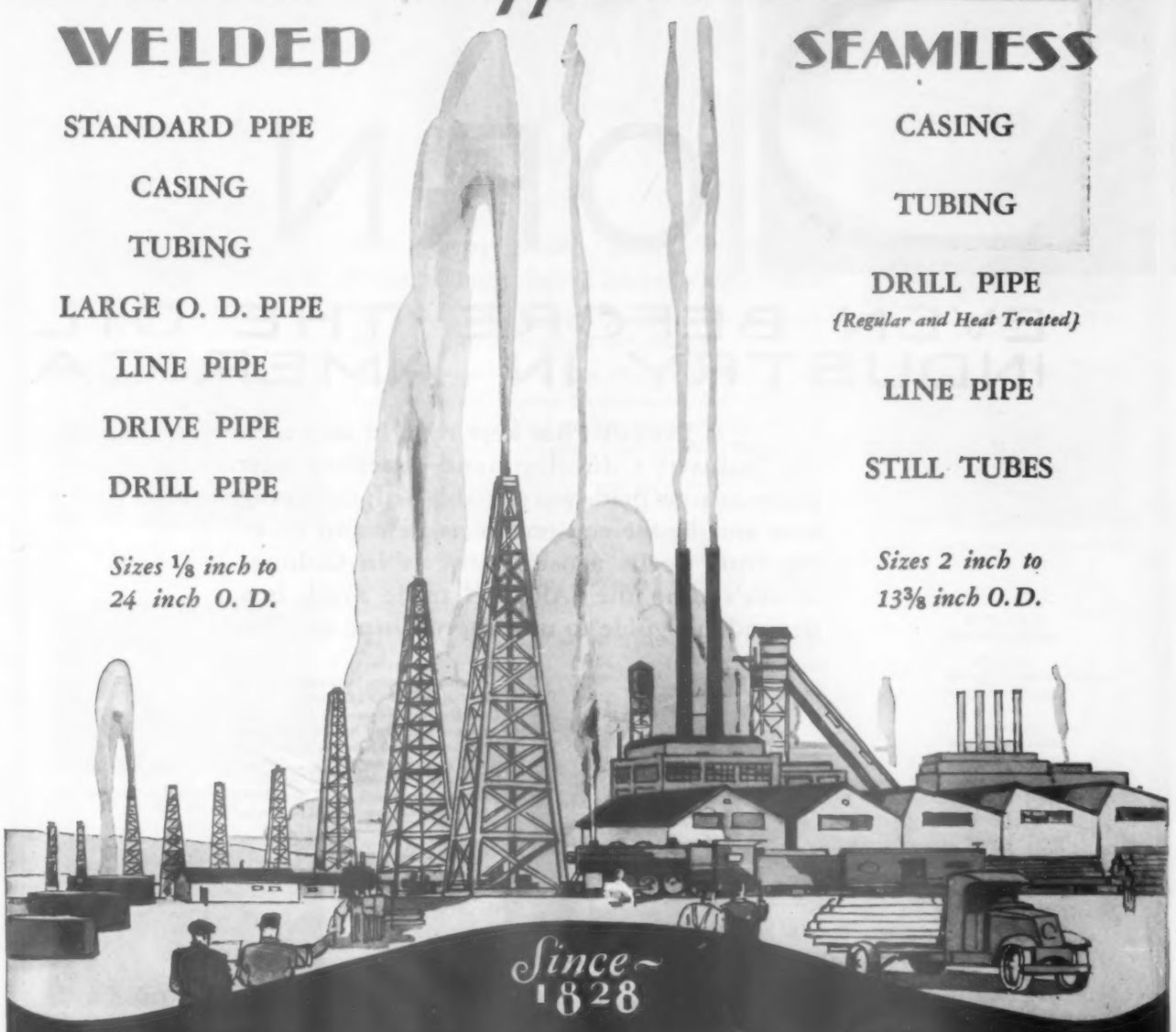
DRILL PIPE

(Regular and Heat Treated)

LINE PIPE

STILL TUBES

Sizes 2 inch to 13⅜ inch O.D.



Since 1828

SPANG CHALFANT & COMPANY Inc.

PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO.
PITTSBURGH, PENNA. TULSA, OKLA. LOS ANGELES, CALIF.

Mills: ETNA, PENNA. SHARPSBURG, PENNA. AMBRIDGE, PENNA.

BORN

EVEN BEFORE THE OIL INDUSTRY IN AMERICA

. . . . . JARECKI has kept right in step with the industry's development—opening new stores as new fields were established; designing new and better equipment as new and more rigorous needs arose. Now, as in Colonel Drake's time, the JARECKI trade mark is a dependable guide to uncompromising quality.

Simple in design, but rich in meaning, the JARECKI diamond "J" on a Valve means ease of operation, ruggedness, long life and efficient service . . . . There are JARECKI Valves for every need—each embodying the essence of seventy-seven years mechanical, metallurgical and engineering experience.

Branch Stores at all important places in the Oil Country

Jarecki
MANUFACTURING COMPANY

Home Office and Factory—Erie, Pa., U. S. A.

General Office—St. Louis, Mo. *District Offices*—Pittsburgh, Pa.; El Dorado, Kan.; Tulsa, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

Say you saw it in The OIL WEEKLY

"FOR EVERY JOINT ON THE LINE" VICTAULIC COUPLINGS

Victaulic Couplings on tropical oil and gas gathering lines

Victaulic Couplings make expansion bends unnecessary

Victaulic Couplings on high pressure natural gas line

Victaulic Couplings on crude oilline that constantly weaves

Oil companies use Victaulic Couplings for these reasons:

1. They connect pipe more perfectly than flanged joints or screw couplings.

2. They provide a line that stays leakproof under severe abuse treatment—not affected by line sag, shifting under pressure, intermittent pressure variations or severe vibration.

3. Every Victaulic Coupling provides a flexible joint which takes care of contraction and expansion of the pipe lengths it connects—assures a strain-free line under all temperature variations without special expansion joints or bends.

4. With unskilled labor a permanently leakproof line is installed faster and at less cost than by the use of any other type of joint or pipe installation system.

5. Victaulic Couplings permit the removal of any pipe length for cleaning or replacement without injury to the pipe and without disturbance of adjoining lengths.

6. Victaulic Couplings are supplied for all pressures from vacuum to ten tons pressure per square inch—sizes from ¾ inch up—for steel, spiral weld, wrought iron and cast iron pipe. Victaulic Fittings make it easy to connect with all types of existing lines.

Victaulic Couplings on crude oil lines to tank farm

Gas gathering line to gasoline plant

VICTAULIC DISTRIBUTORS:

Western
SMITH SEPARATOR COMPANY
Tulsa, Oklahoma

Canadian
D. B. WILLIAMS
Toronto, Canada

New England
EASTERN SERVICE COMPANY
Boston, Mass.

Illinois, Indiana
BELL & GOSSET
Chicago, Ill.

Minnesota, Wisconsin
F. S. VAN BERGEN
Minneapolis, Minn.

Ohio
CASE HARDENING SERVICE COMPANY
Cleveland, Ohio

For complete information, write or mail the coupon.

The all-purpose pipe coupling

"For every joint on the line"

FLEXIBLE LEAK-PROOF

VICTAULIC

REG. U.S. PAT. OFF.

PIPE COUPLINGS

VICTAULIC COMPANY OF AMERICA
26 Broadway, New York

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

Please send Victaulic Bulletin No. 8

Name_____

Address_____

FOR CRUDE OIL, GAS, WATER, SEWAGE, COMPRESSED AIR, ETC.

"Here, Lad—

We need some new welding machines. I listened to you last time and bought Lincolns. Then my old electrical friend was sore because I didn't buy his.

Let's compromise this time and get his make—you know he takes his welder quite seriously."

"Yes, Pop—

But I don't. The safe way to settle our difference of opinion is not by compromise—but by arbitration.

To arbitrate a difference requires a third person. If you'll put an experienced welder operator on as arbiter—that ought to make it safe for both of us.

And naturally, I feel that the operator would settle the discussion in favor of a Lincoln 'Stable-Arc' because he is the man who will profit from the 7 points at the left.

But the fact that your friend takes his welder seriously is beside the question. It simply proves his lack of humor."

The Lincoln "Stable-Arc" Welder

—welds easier
—makes better welds
—permits greater output

because of the steady uniform arc throughout entire welding range, which is the result of:

Variable voltage design
Laminated magnetic circuit
Separately-excited generator field
Double control of welding heat
All steel construction

No other welder has all these features.

The Lincoln Electric Co., Dept. No. 33-5, Cleveland, Ohio

W-80

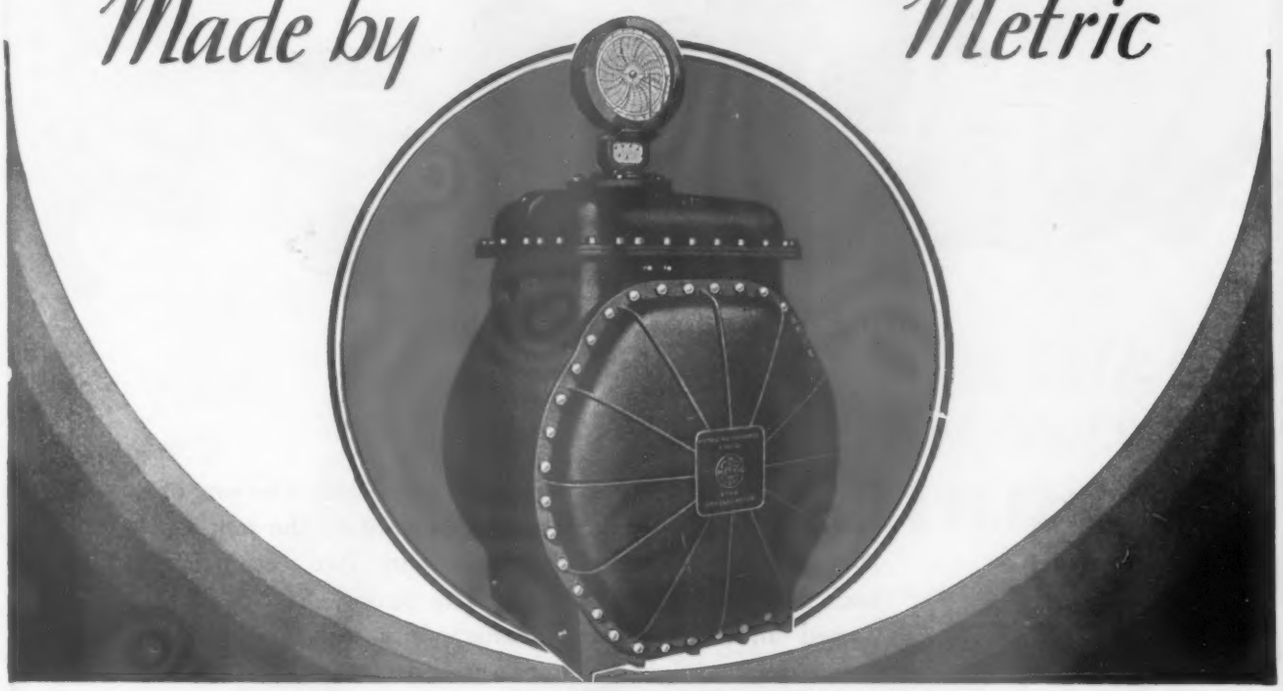
LINCOLN "Stable-Arc" WELDER

Say you saw it in The OIL WEEKLY

IRONCASE

MASTER METERS

Made by Metric



GREATER CAPACITIES ... DECREASED WEIGHT

NO INCREASE IN REVOLUTIONS PER CU. FT. OF GAS MEASURED

PIONEER IN USE OF ROLLER BEARINGS

ALEMITE LUBRICATION SYSTEM

FRICTIONLESS, NOISELESS VALVE MOVEMENT

CAPACITIES: 2,000-3,000-6,000 & 10,000 CU. FT. PER HOUR

SALES SERVICE

WESTCOTT & GREIS, Inc.

Dallas - - Tulsa - - Los Angeles

METRIC METAL WORKS

of the American Meter Company, Inc.

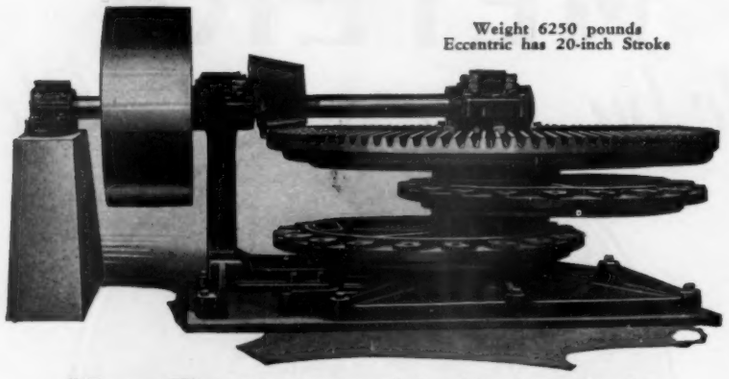
ERIE · PENNSYLVANIA · U·S·A·

Bulletin No. 300-B describes Metric Ironcase Meters 80-B, 250-B and 500-B. Mailed upon request.

Say you saw it in The OIL WEEKLY

A Heavy Under-Pull Power

With Two Eccentrics



Weight 6250 pounds
Eccentric has 20-inch Stroke

Now Equipped with Automatic Pump Lubrication

PATTIN PRODUCTS

- Gas Engines
- Air and Gas Compressors
- Vacuum Pumps
- Shackle Irons
- Pumping Powers
- Oil Country Boilers
- Steel Storage Tanks
- Water Pumps
- Torpedo Reels and Clamps
- High Pressure Tanks
- Howe Casing Heads

THE PATTIN BROS CO

THE power illustrated above is conceded to be one of the most powerfully geared powers on the market. A very heavy under-pull power with two eccentrics, each having a 20-in. stroke. The pinion shaft is supported on three bearings, which is a very important point, because tight belts soon pull ordinary powers out of line, resulting in broken gears.

This power is geared eight to one, the pinion is steel, and we have never had one fail on the heaviest of loads.

We recommend this power in place of the usual band wheel powers, and their expensive installation. If desired, we can furnish this power with one eccentric.

Write for prices, or inquire of any of our representatives

The Pattin Brothers Company

MARIETTA, OHIO

Tulsa, Okla.	Coleman, Texas	Wichita Falls, Texas	Putnam, Texas	Bradford, Pa.
A. S. Dunnington	J. Barnes	J. W. Noland	Putnam Supply Co.	The Blaisdell Machinery Co.

You just CANT BEAT 'EM!

Made to API Specifications

When Oil Men talk: the problem of tools MODERN EFFICIENCY

Wherever oil well Sucker Rods are "equipment" not "*tools*," performance is the subject of conversation among production men and Jones Sucker Rods always come in for a good word.

"No matter whether 2000 or 6000 feet never a failure" is the invariable tribute to Jones H. M. Sucker Rods among hundreds of successful oilmen.

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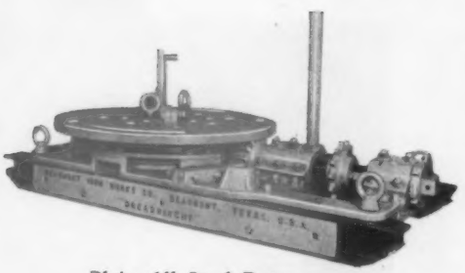

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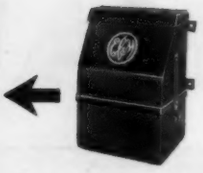
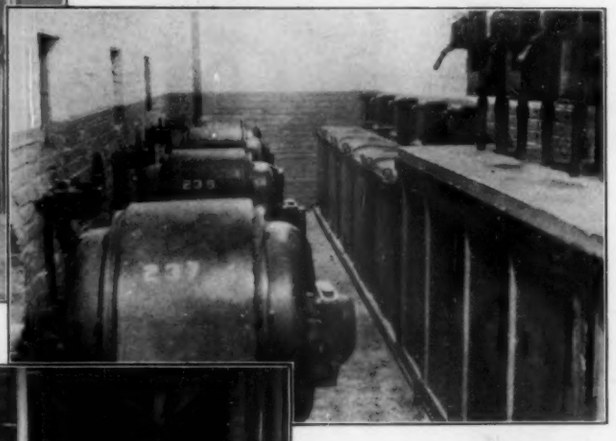


Type ZO starting switches control these pumps



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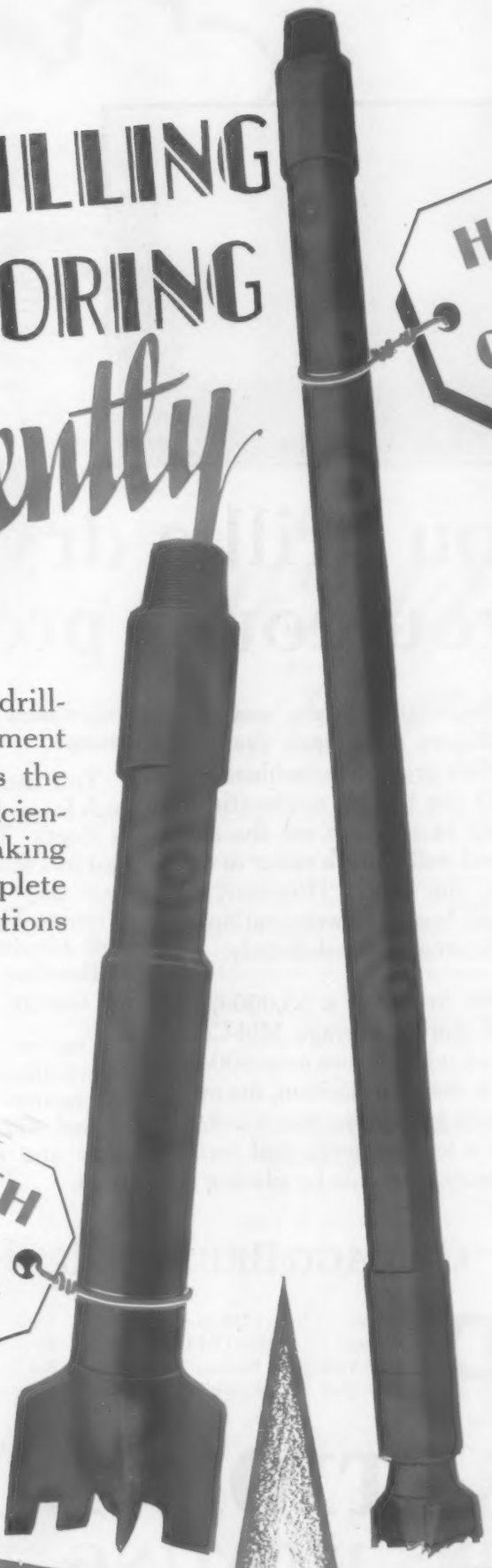

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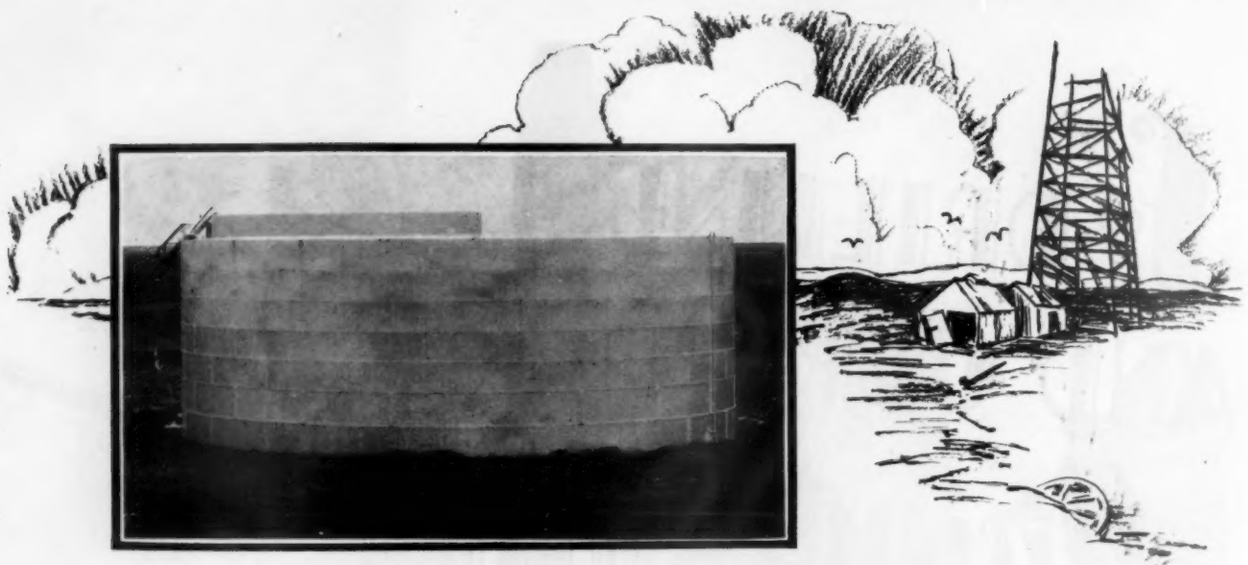

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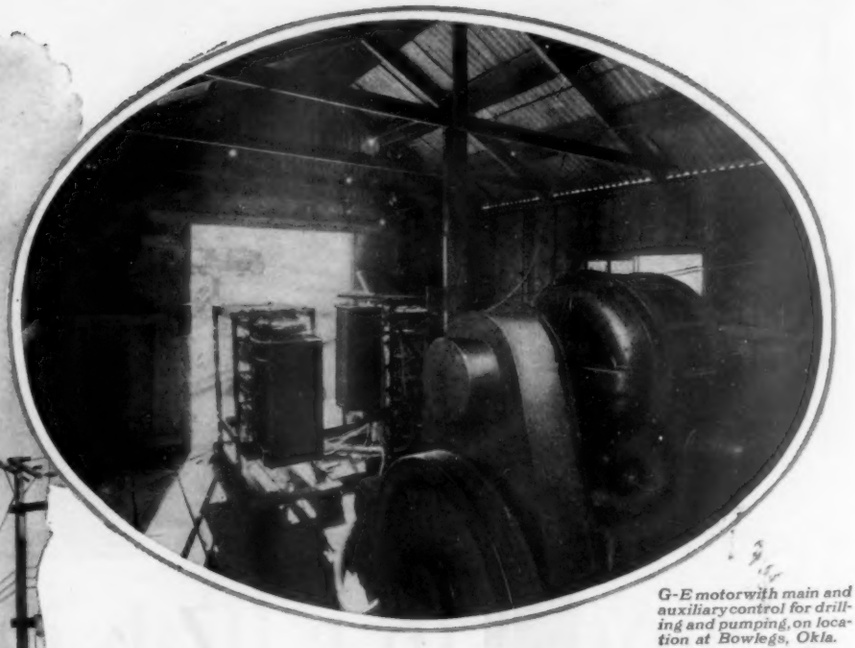

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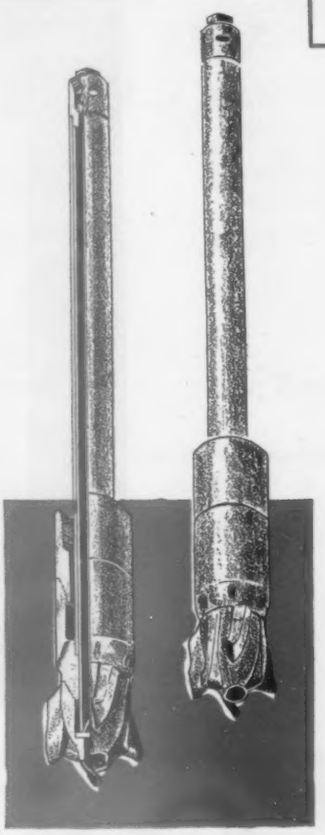

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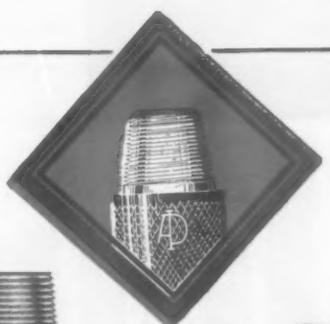

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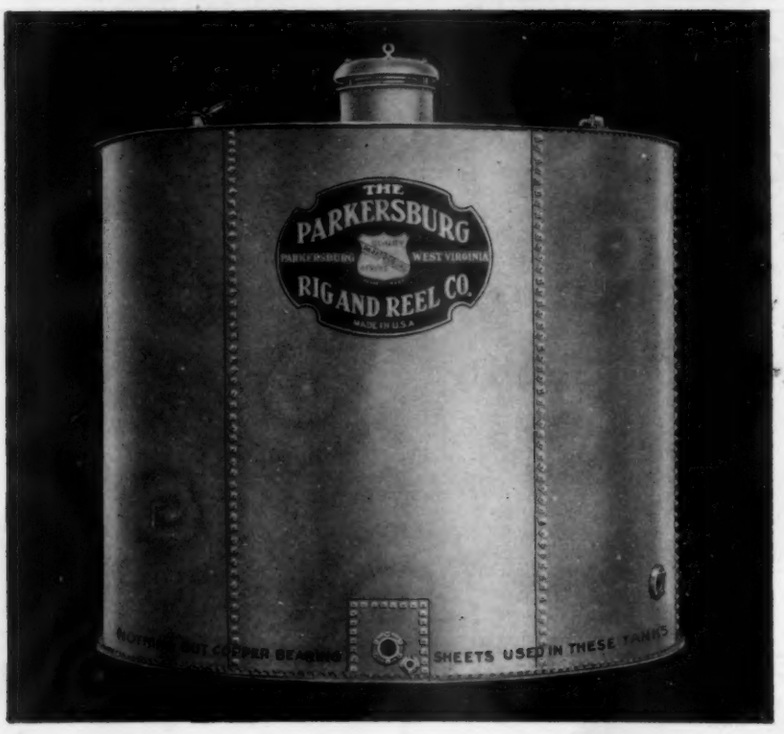

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The OIL WEEKLY

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VOLUME 53, NO. 9 — MAY 17, 1929

Edited Weekly at Houston, Texas — SPENCER W. ROBINSON, EDITOR

TABLE OF CONTENTS

Special Features

Pending California Law Legalizes Curtailment Agreement 29
By A. L. Weil

Crooked Hole Problem Minimized in Burma 31
By Wallace Davis

Extended Search for Production in Kansas Still Growing 32
By Warren Baker

Safe Operation of Air and Gas Lift 35
By F. W. Robson

Scouting in Venezuela 34
By Roy E. Leigh

Rotary Fishing and Fishing Tools 37
By Harry Pennington

Safety in Operation Would Reduce Compensation Rates 42
By Stoddart Smith

Regular Departments

Advertisers Index 122
Markets-Production-Crude Prices 47
United States Production Estimates 50
Crude Oil Price Quotations 53
Completions for Past Week in All U. S. Fields 91
Permits Granted for New Wells 95
Wildcat Drilling Reports from All Important Areas 101
Rocky Mountain News Notes 113
News from California Fields 61
North and West Texas Field Notes 68
Gulf Coast Field Development Notes 70
Oklahoma-Kansas Field Notes 65
Louisiana-Arkansas News Notes 74
Personal Mention—Men You Know 60
New Equipment 117
Squeaks from the Bull Wheel 120

MEETINGS OF INTEREST TO PRODUCERS

MAY 20-21:
National Oil Scouts Association of America, The Texas Hotel, Fort Worth, Texas.

MAY 21-22-23:
National Gasoline Association of America, Mayo Hotel, Tulsa, Oklahoma.

MAY 28-29:
American Petroleum Institute, Division of Development and Production Engineering, Mid-Continent District, Mayo Hotel, Tulsa, Oklahoma.

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Published Weekly
by
GULF PUBLISHING COMPANY

OFFICE OF PUBLICATION
3301 Buffalo Drive, Houston, Texas

R. L. DUDLEY, *President*
A. L. BURNS, *Gen'l Manager*
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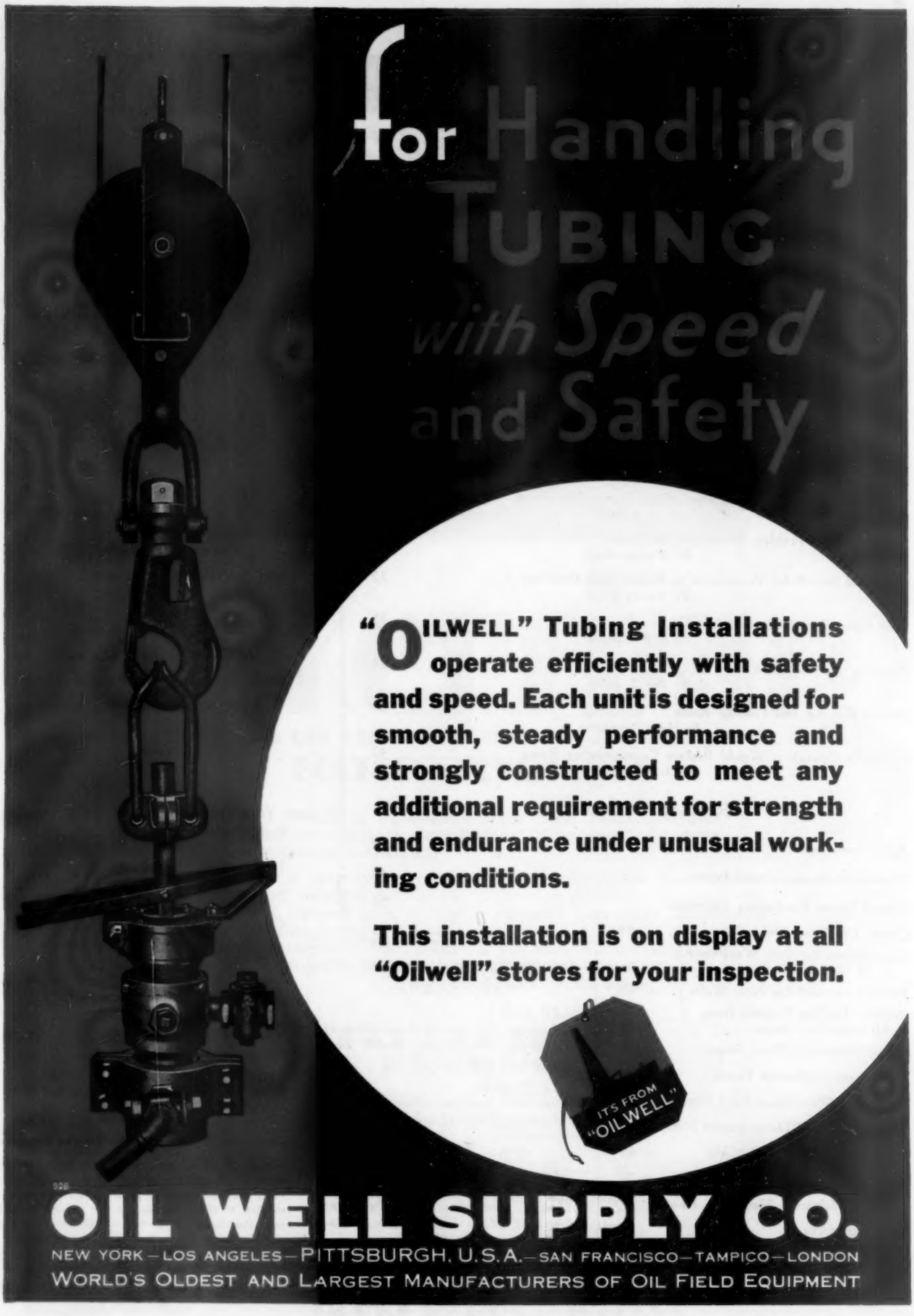
Issued Friday of each week. Single copies 10 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.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Volume 53, No. 9 *May 17, 1929*

The OIL WEEKLY

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Pending California Law Legalizes Curtailment Agreement

By A. L. WEIL

General Counsel, General Petroleum Corporation

THE accompanying paper, presented in Los Angeles, April 30, before the California section of the American Petroleum Institute's Division of Development and Production Engineering, discusses objects of a new law in California, which has been approved by both branches of the state legislature and only awaits the governor's signature to become a law. The bill setting forth the proposed law carries an emergency clause making it effective 10 days after it has received the governor's signature of approval.

It is generally understood that this law will make it possible to bring about the same objective now sought by co-operative methods through an umpire. The governor is expected to sign the measure at once. It should be in full effect not later than June 1.

"I THINK that this bill, this law, if passed, will be the most constructive forward looking measure that has ever been attempted anywhere. I think it is also free of many of the objectionable qualities which attach themselves to some of the laws of some of the other states. George Otis Smith expressed the highest regard for this law and he thought it would work.

"The most important part of this law is not the coercive feature of it; it is the permissive feature. You have heard all this talk about agreements being in violation of the Sherman Act and of the Clayton Act. Of course, no state can eliminate the application of the Federal anti-trust laws. I think most counsels who have considered this subject are agreed that the production of oil within the confines of any particular state is not interstate commerce, and hence not subject to those laws. But there is a possibility that agreements in restraint of production might be considered in violation of the Cartwright Act, which is a California anti trust statute. I do not think it is a violation of the Cartwright Act, but there are many men for whose opinions I have great respect who think otherwise.

"The law permits operators and owners in any given oil field, or any number of oil fields, to enter into an agreement to curtail production. It permits them to agree on unit development, to make arrangement for special line wells, for the protection of the boundary lines, the repressuring of exhausted areas, and specifically says when these agreements are in the interest of conservation and are approved by the state oil and gas supervisor and found to be in the interest of conservation, these agreements shall be valid.

"There is a good deal of difference between having a valid agreement and having the benefit of it. The law ordinarily permits a man to violate his agreement with more or less impunity as to the performance of the agreement itself, providing he is willing to pay damages. If anyone offers to sell me a watch and I accept the offer and then the owner of the watch refuses to deliver it to me, I cannot get an order of the court compelling him to turn the watch over. If I can prove that he offered to sell the watch for $20.00 and it is worth $30.00, I get $10.00 damages from him.

Validity of Agreements

"In most circumstances in the sale of chattels and goods, damages is quite a satisfactory remedy for the breach of a contract. But there are certain cases where it is not, and it certainly would not be a satisfactory remedy in a case of this sort. If twenty or thirty oil producers agreed to shut in their production to the extent of 25% or 30%, and two or three weeks later, half of them got sick of the agreement and opened up their wells, there would not be very much relief granted to the parties who kept their wells closed to relegate them to an action for damages. In the first place, it would not accomplish the result intended and in the second place, it would be difficult to prove the damages, so the persons whose agreement was violated would be almost without a remedy.

"In the law, there was one exception to the rule that you were relegated to sue for damages that was in the case of the sale of real property. The court recognized that and there was formed what was called an act for specific performance. If a man agrees to sell you a piece of land and then refuses to deliver, you don't have to sue for damages; you can sue to compel him to give you a deed and if you prevail, the court will order him to execute the deed. If he does not, he can be sent to jail and the clerk of the court told to execute the deed.

"Providing the means of relief are valid, we have undertaken to make them of some use, so when the man signs the agreement to curtail production, you can be reasonably sure his production will be curtailed, because the law provides that these agreements may be specifically enforced, and so when the agreement is once entered into, if it is broken, an appropriate action can be brought, and if our learned supreme court holds the law valid, the court will specifically compel that man

to shut in his production as he agreed to. That I consider is the most important feature of this bill.

"I think that the men in the oil industry are unusually intelligent. I think everybody recognizes that this over-production situation is foolish, economic suicide, almost, and after the first flush of annoyance has passed away at the thought of shutting in part of a perfectly good well that was bringing you in money and sober second thought extends its sway over the members of the oil industry, I think this is going to be the most important and most influential portion of this legislation. But if it is not, there is a coercive feature in this bill which it is expected will bring about the necessary results.

Coercive Features

"The coercive features of this bill provide that the unreasonable waste of gas is against public policy. The bill provides that if any one complains that there is an unreasonable waste of gas in any well or any field, that he present the matter to the director of the Department of Natural Resources of California. The Director of the Department of Natural Resources will thereupon call a hearing before the State Oil and Gas Supervisor. At this hearing, all persons interested will be notified to be present and will be given an opportunity to present their views. After the case is concluded—this will be a hearing just like the railroads have before the Railroad Commission to determine the reasonableness of rates or the reasonableness of their service, and will probably be conducted in much the same way. After the hearing is terminated the State Oil and Gas Supervisor will make his finding as to whether or not there is any unreasonable waste of gas, and if so to what extent and will order it discontinued.

"If the State Oil and Gas Supervisor is arbitrary or unreasonable or is not acting advisedly, there is an appeal for the aggrieved party to the Commissioners elected under the old water law, commissioners elected by the county, who have an opportunity to review the decision of the State Oil and Gas Supervisor. This decision if affirmed, or if modified, then as modified, is certified to the Director of Natural Resources, and if any operator refuses to obey the order, the proceeding is started in court for an injunction in order to compel the operator to discontinue the unreasonable waste of gas.

Unreasonable Waste?

What constitutes an unreasonable waste of gas? The law could have said that any waste of gas shall be stopped, which would have created a very serious situation in some of the oil fields, and probably would have brought production of oil down below the requirements of the people of the state. So they advisedly used the words 'unreasonable waste of gas.' A fair construction of that term, unreasonable waste of gas, in my opinion is this: that every escape of gas into the air is not unreasonable; it is a necessary adjunct to the production of the required amount of oil. But when huge quantities of gas are being allowed to escape into the air without any economic use whatsoever and that gas is wasted for the purpose of bringing oil to the surface of the ground that is not needed, then you have a combination of wastefulness which any ordinary man would have no difficulty in determining to be unreasonable. In other words, if any gas is used for the purposes of domestic heating or the purpose of factories, it is not being wasted at all. If gas is going into the air, but the gas that is going into the air is necessary to bring up sufficient crude oil in order to currently supply the people with gasoline and fuel, that gas is being wasted, but it is not unreasonably wasted, because the people have the right to be supplied with fuel oil and with gasoline at a reasonable price. They have a right that no artificial theory of saving natural resources shall curtail the production of another natural resource so as raise its price beyond reasonable bounds. And so I think in all fairness, that a fair definition of the words 'unreasonable waste of gas' is a waste of gas in excess of the amount which is reasonably necessary to bring to the surface of the earth the amount of oil that is currently needed in the industries of the state.

"That is about all there is to the bill. It is not very long and not very involved and an attempt has been made in the bill to equalize the taking of gas so that one man shall not be penalized and required to curtail his production because some other man has a contract with the gas company. An attempt has been made to solve this. It is a new subject and again I say, whether that part of the problem has been solved, time alone can tell. But we are making a step in the right direction. I think we have made a big step in advance in the drafting of this bill. Most of the oil companies have cooperated and it meets with their approval. The State administration has approved of this.

Probable Defects

"When the bill is put into practice there will probably be a lot of defects develop. One of the main difficulties of the bill will probably be the delay which will ensue in the enforcement, but that is inevitable in any legislation, and it is to be hoped the permissive portion of the bill will be availed of by the oil operators so the coercive portion will not be necessary. It is the hope of the framers of the bill that this bill will act like a traffic policeman. The man shooting along at 50 miles an hour, doesn't wait for the traffic policeman to give him a tag, but as soon as he sees the policeman he slows down to 40 miles, and makes orderly and reasonable progress. It is hoped when the oil operators see the state has a coercive measure which can be enforced, they will take the matter up with their own good judgment and decide that the oil operators can get together and arrive at a much better conclusion, and by a little giving and taking and yielding here and making proper allowances in the hardships to which one man or another may be subjected, than to have it go up to a quasi-judicial tribunal where there will have to be a firm hard line. Let the chips fall where they may. That is about all I can say about the bill at the present time.

"Before I stop I would like to call attention to what I think is the real solution of the over-production problem, and I don't think it lies in either voluntary agreement or coercive legislation. The idea which I have is not original with me and you have probably heard it before, but somebody always seems to put the soft pedal on it for some reason or another, and it is the real solution of the problem.

"Supposing you knew a young man about twenty years old, getting a liberal allowance from his father and he was going out at night, drinking bootleg liquor and gambling and indulging in its supplemental and accessory vices, and you thought it desirable that that young man should be checked in his course; I ask what remedy would you use? Would you go to his medical advisor and have the doctor tell him when he got to be 50 years old he was going to have diabetes and Bright's disease and anthritis and one thing and another if he didn't discontinue his riotous life? Or would you go to his spiritual advisor and tell him his morals were suffering seriously from these over-indulgences and he was a bad example to the community? Or would you go to the father and say, 'Cut off this lad's allowance?'

Over-Production Solution

"Now, that is just exactly what is happening in the oil industry just now. We are a young man who has too large an allowance; there is too easy money in the oil industry. Tom O'Donnell had a good deal to say about this not long ago, and other leaders of the industry have said much about it, and all I want to do is echo their words, because there I see the real solution. You gentlemen all know that if the oil companies in California had to do all this development and all this expansion of tankage and pipe lines and refineries and new wells and what not, out of their own current earnings, they would surely have to curtail their dividends, if even that would be enough to carry on the financial strain, and most of the oil companies nowadays, with one eye on the derrick and another eye on the stock ticker, are not going to curtail their dividends. You know there is not an oil property in the state today that has 15,000 or 20,000 barrels a day flush production that cannot go in the market and borrow $10,000,000.00 on a bond issue to get all kinds of facilities for handling this enormous production,

(Continued on page 113)

CROOKED HOLE PROBLEM *Minimized in* BURMA

Realization by operators that less drilling feet per day mean lower lifting cost is big item in the solution

By WALLACE DAVIS
Staff Representative

CROOKED holes ceased to be a major problem in Burma when operators proved that sacrificing footage meant big dividends from saving in lifting cost.

Burmah Oil Company, Ltd., owner of approximately 95 per cent. of Burma's 20,000 barrels production, was making a technical study of crooked holes several years before the problem became an eminent one with American engineers. This company combated the crooked hole problem with system, and has kept systematic records on findings and results as it has on other drilling and producing problems. The practices of Burmah Oil Company in dealing with crooked holes are therefore of interest to engineers in America and throughout the world where the problem exists.

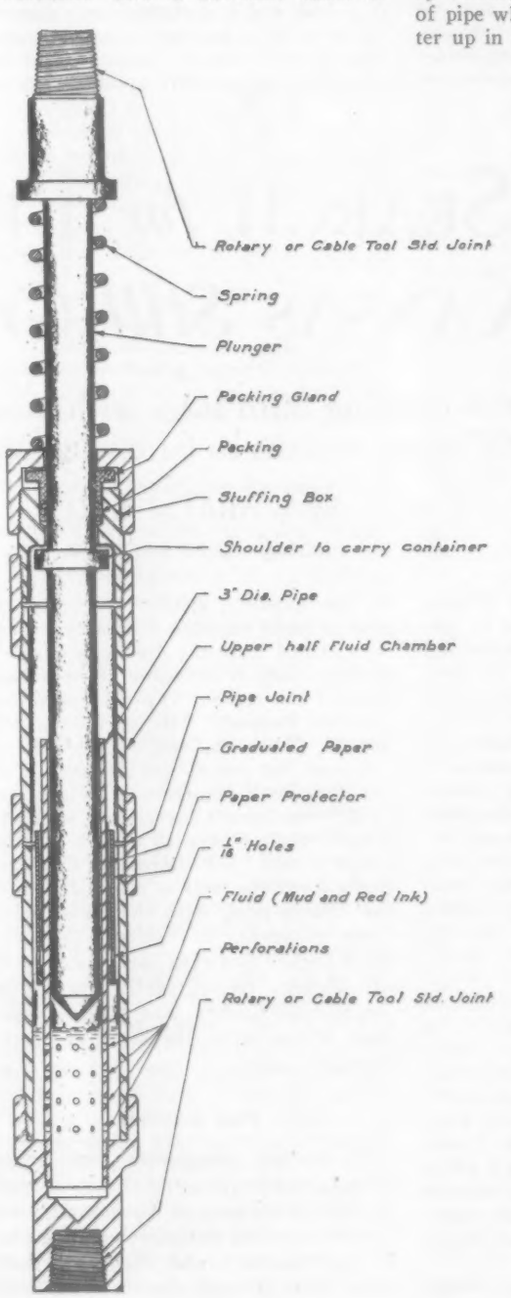
The latest system inaugurated by Burmah Oil Company is that of allowing drillers only 90 feet in 24 hours. And, for the purpose of keeping this allowance to a steady run, the 90-foot allowance is divided into 30 feet for each of the three tours. No crew is permitted to exceed its allotted 30 feet during the eight-hour tour. For the sake of comparison it is well to mention that as much as 300 feet of hole can be made in this same formation during a 24-hour run.

As soon as a hard formation is encountered by a Burmah Oil Company crew the pumps are slowed down to the point of merely maintaining circulation until a perfect seat is formed for the bottom of the bit. This working principle prevents washing the soft formation away, thus preventing the enlarging of the hole just over the hard formation.

Burmah Oil Company has adopted somewhat of a standard combination for drilling hard formation with rotary, and, it might well be mentioned here, rotary is used practically altogether in proven Burmese fields except for completing wells. An eight-inch drill collar is used with 250 feet of eight-inch 45-pound drill pipe just over the collar.

In spudding it is figured that no rotary hole will normally start straight, considering the weight of the mud hose and other equipment throws the string off center at the top. Furthermore the results obtained in the common bore hole, as the auger in wood, are accepted, assuming that the hole started crooked will tend to continue crooked.

Particular care is therefore taken to start the hole straight. The operators are holding the initial string perpendicular by feeding the "kelly" through a piece of pipe which is suspended on exact center up in the derrick. This pipe is eight-inch and about 12 inches long. Sand lines are then run from holes in the pipe joint to each of the four derrick legs and the position of the joint fixed over center. The first position of this guide hook-up is approximately 10 feet below the top of the drilling string. When this 10 feet is made the center guide is moved lower and more hole made. At 100 feet the string is pulled out and the hole tested by dropping an electric light and reflector to bottom. Hole making then continues to 250 feet, where the first inclinometer picture is taken.



A picture of the hole is taken regularly at 250-foot intervals and turned in with the drilling report. These pictures are as vital a part of the well log as the formations themselves. Thus at completion of the hole the operators have a pictorial layout of the hole every 250 feet. If there is evidence of deviation above the 250-mark an extra picture is taken. On finding from the picture that there is sufficient deviation to point to trouble drilling operations are shut down and the hole is plugged back to the point of deviation and re-drilled. If the hole is found off center for a depth of more than 100 feet a cement plug is built up to the point of deviation on top of the mud column. If the crooked part of the hole is found to be for only a short distance then the cement plug is run from bottom. After plugging back to the angle in question a rock bit is run in and the plug slowly drilled until the straight line carries the bit out of the cement plug, at which

point a soft formation cutter is substituted for the rock bit.

Burmah Oil Company's device for photographing holes requires only one minute of sitting at the point to be photographed. Devised by B. R. Emrick, technical adviser over the drilling and production departments for the company, it is designed for use on both rotary and cable tool operations.

The apparatus, illustrated here, reveals the amount of deviation by plotting the angle of the hole in red ink on white drawing paper which is graduated to a scale of one degree represented by each line. The container is made of a scrap joint of six-inch drill pipe about eight feet long arranged for either screwing into the rotary string or connecting onto cable tools. A short piece of three-inch pipe is screwed into the bottom of the six-inch drill pipe joint to reach about half way up the container.

Three gallons of 70-pound mud is mixed with one pound of red ink and poured into the container. The three-inch is perforated one foot on the bottom. A solid plunger fits fairly tight in the three-inch pipe. A stuffing box is fit at the top of the container to prevent mud from the hole entering the container. When the apparatus is lowered to the point of photographing, the plunger is lowered to bottom in the three-inch by the weight of the upper pipe string in case of rotary or a sinker weight in case of cable tools. This weight is against a spring working on the plunger between the stuffing box and a pin, the latter of which reaches and fits on top of the stuffing box at the same time the lower end of the plunger reaches and sits on the bottom of the three-inch pipe.

As the plunger lowers it displaces the mud mixture in the three inch, forcing it through the perforation and up on the outside of the three-inch. As the mixture comes in contact with the paper around the inside pipe the picture is made by the red ink content. The paper fits around the three-inch and is protected from possible splashing by a tin cage, which is perforated at the bottom to the point of taking the rising mud mixture gradually. After allowing about one minute to set the apparatus is pulled from the hole, opened, and the paper taken out to dry. Pictures are dispatched to the office after the driller gets his information.

The present method of drilling by rotary is resulting in no more cost to produce rotary drilled wells than cable tool drilled wells. Herein is revealed a vast saving in pipe and pumping equipment.

Picture records obtained by the drilling department are used by the production department following completion of the wells. The amount of deviation at each depth photographed is at hand when each well is being rigged up to pump. Crooked hole information is given the production crew so that sucker rod guides may be installed at points of deviation, and the guides are placed according to the amount of deviation. Thus the saving on depreciation of tubing and sucker rods as well as a saving in power necessarily added by irregular strings caused by crooked holes and resulting in added friction.

Extended SEARCH *for* PRODUCTION *in* KANSAS *Still Growing*

Campaign now entering third stage with prospects for continuing several years; success so far encourages operations

By WARREN BAKER
Staff Representative

WICHITA.—The Central Kansas oil boom is now entering its second period of development and looking bigger than ever before. The first period was the discovery of the Valley Center field in Sedgwick County, and its development. Now comes the drilling in of the many wildcats that started as a result of that strike. Already, a number of important discoveries have been made that have greatly increased the area covered by the play. Preparations are being made for the third period of exploration. The study of the district by geologists continue and at the same time the new wildcat producers are causing an increased amount of activity.

The play in Kansas is a series of trends along which are expected to be found, and have been found, a large number of structural highs that probably carry production. These ridges run across the greater part of Central Kansas. Some extend from Sumner County northeast into Dickerson and other northern counties. All of the located ridges or highs run in a general northeast by southwest direction, but by no means in a straight line.

The much more thorough knowledge of the existing structural conditions now at hand through additional learnings gained from the drilling wells and further study is changing the previous view of the region. The old belief was that the Peabody, Elbing, Potwin, Eldorado, Towanda, and Augusta trend was one. But recent correlations are to put the north members of this group in different trends correlating with late discoveries in Sedgwick County. An example is that Shell Petroleum Corporation's Lygrisse well is correlated with the Elbing pool, with the trend being extended south to include the new Shell-Dickey-Shawver producer south of Wichita, thence south into northern Sumner County. The Valley Center field is traced northeast through the Peabody field.

Play Extends

Heretofore, companies have been slow in moving far into the north part of the central area of Kansas. At present they are fast commencing a big play in that territory and viewing it with great favor. A large amount of blocking is being done in Saline, Dickerson and other counties in this vicinity.

One of the most important developments to occur in the history of the campaign since its inaugural last August at Valley Center is the finding of a producer in the Ted Washabaugh Vosshell well south of McPherson in that county. This well found a very thin body of Mississippi lime in comparison with other tests that have been drilled in the region. The final outcome of this test will be awaited with much interest. Indications are that it is located on a big reservoir. The Washabaugh is the first producer in McPherson County from the true Wilcox sand series, and lies north of Sedwick about 40 miles.

While the greatest increase in the play has been to the north, the south end has not been entirely forgotten. Late discoveries have encouraged the exploration along a number of trends or ridges extending south from Wichita into Sumner County. Gypsy Oil Company's Williams producer is believed to be on one of the trends running through Sedgwick and other northern counties. Later correlations may show some of the north central Oklahoma

famous producing trends lining up with those being found in Kansas. Gypsy Oil Company's well is generally thought to have opened only a small producing "pimple." This attitude is taken because it has been the case with other discoveries in the region.

Seven ridges or trends are known to exist, five of which have production. With a more intensified development more are certain to be found. It now appears that a number of these trends will be but an average of three miles apart instead of ten miles as originally predicted. Blocks totaling in many instances thousands of acres have been assembled along them after careful study has shown the structural conditions. The industry is fortunate that such is the case as it will eliminate in many instances a heated competitive drilling rush for the producing horizon.

Geology Is Simple

This region of Kansas offers simply geological work to locate structural highs and lows. Core drills, seismographs, torsion balance machines and sub-surface geology are methods employed in locating the structures.

Field men are far from through with the study of this sector. There are 50 core drills in the state, of which 45 are active and five more are on location. These spread through the central and western parts of the state. Reno is the most active county in this type of work, having nine machines. This county is soon expected to be the center of much blocking, resulting from the general westward movement of the play, while also going to the north and south.

Other counties in which core drills are working and their number are as follows: Harvey, five; Sedgwick, five; McPherson, Marion, Sumner and Trego, three each; Ellsworth, two; Dickerson, Rice, Phillips, Barton, Stafford, Rooks, Jewell, Kingman and Osborne, one each. Companies operating these machines are as follows: Dixie Oil Company, Empire Gas & Fuel Company, Gypsy Oil Company, Marland Production Company, Mid-West Refining Company, Phillips Petroleum Company, Shell Petroleum Company, Sinclair Oil & Gas Company, Skelly Oil Company, Wentz Petroleum Company, White Eagle Oil & Refining Company, Western Exploration Company, and Mid-Kansas Oil & Gas Company.

Amerada Petroleum Corporation has two seismograph machines located in Rush County. Phillips Petroleum Company has a magnetometer in Lane County. Carter Oil Company has two magnetometers, one in Osborne, and the other in Ellsworth County. In Dickerson County, Empire Gas & Fuel Company has a magnetometer. Marland Production Company has a couple of torsion balance machines in McPherson County. Gypsy Oil Company is trying out two radio torsion balance machines in the state.

The tremendous magnitude of the Kansas play is shown by the vast territory included in this preliminary work. The great amount of drilling development to be done in the future is also shown by this work. Some of the machines are located on blocks already assembled on which the owners wish to learn more of structural conditions, while others are looking for new structures.

Use of Rotaries Increase

The number of rotary drilling machines being moved into Kansas is increasing. Heretofore, Kansas has been considered a strictly cable tool country. When the race in the Golden Triangle at Valley Center commenced some rotaries were put in and beat the cable tools. This has caused the spread of their use. A check of operations in the district, however, show that rotaries do not have a big advantage over the cable tools. This is due to the shallower depths of the formations in the central area, the usual depth being around 3400 feet. The average rotary hole requires from 35 to 40 days from the time it is spudded until it is completed, including running the six-inch casing, cementing, rigging up standard tools and drilling in. The average standard tool test takes from 55 to 60 days, although a few have been finished in 40 days.

Most of the holes drilled in Kansas are pretty true to vertical, according to test made with the acid bottle. This is probably due to the flatness of the formations. Little or no trouble has been experienced in Central Kansas from crooked holes.

Several Producing Horizons

All drilling tests seek the Wilcox series, where the Viola lime, Simpson or Wilcox sands may be found productive. There are other upper pays in which production may also be encountered.

A number of present drilling wells are deep enough to tell that they are running high and other important discoveries in addition to those already made are anticipated.

Although it has been known for some time, very little has been said about the peculiar producing conditions at Valley Center. There are two pay horizons in the lower stratum. Both are called the Simpson dolomite since they are closely related. The upper pay is found in the north end of Valley Center, but carries little oil in the south, while in the south end or Wright area of Valley Center, the upper pay carries the oil. This accounts for the fact that one well is high and its offset apparently low. There are a few cases in Section 6-26-1e in which wells have produced from both pays, but ordinarily if oil is found in one the other carries water or no oil. After topping the Mississippi lime there is usually about 80 feet of black shale before entering the first pay, if the first pay is present at all. If the first stratum is not found there is about 20 to 30 feet of grey shale below the black, then comes the second pay. This grey shale also separates the two pay horizons, when both are present, although not always this thick.

A peculiar thing at Valley Center has been the fact that small wells have often times offset large producers, while correlations show them about level on the structure. This is due to the fact that there are hard, tight spots in the sand, which naturally result in small wells, while the soft spots yield the large producers.

While a number of wells are said to be producing from a chat formation around 3000 feet in the vicinity of Wichita, there is some discussion as to whether this oil is not coming from a sand lying just above the chat. This sand in time will probably be termed the Burgess since most sands just above the Mississippi are called the Burgess. There is no way to tell just where this sand will be present. It has been found in one well and entirely lacking in the offset. Probably, it was washed down from some of the old prehistoric ranges around Elbing by streams and deposited. Some production and many good showings have been found in the sand.

Its best well is the Marland Production Companys Goodrich 1, Section 16-25-1e, north of Valley Center. It is thought that the oil in this well is coming from the Burgess sand instead of the chat as usually reported. This well has maintained a steady big production, which is not characteristic of chat production. The Goodrich area is not looking so bright at present, but according to sub-surface material furnished by core drill information the top of the Goodrich structure may be to the south of the present wells.

Summary

Kansas is taking the spotlight away from the other Mid-Continent oil producing states from a development standpoint, although it is very doubtful if its production will crowd that of Oklahoma and Texas. This does not mean that good money will not be made. Those lucky enough to find oil on one of their big blocks will be "sitting pretty.' The wells, however, are not showing the tremendous initial flow that has been found in West Texas and in the Seminole fields of Oklahoma. There are some advantages on the Kansas side. The gravity of the crude is much higher than that produced in West Texas and demands a higher price, and the depth is much shollower than that at Seminole. Kansas production can be expected to go considerably higher than its present output, where it is just below a new peak recovery for all times. The tremendous area looking so promising over its last years standing, together with the geological study and blocking, promises that the play will continue over a period of several years.

SCOUTING IN VENEZUELA

By ROY E. LEIGH

C. C. McDERMOND

C. C. McDermond, a leader in the Foreign Colony, is the dean of the scouting fraternity in the Maracaibo Basin. When it comes to Latin-American oil operations, "Mack" knows his okra, as well as his turnips. He operates an independent scouting service with important clients in London, New York, Chicago, and elsewhere.

He entered the oil business through the sales department of The Texas Company in Florida. Later, he was transferred to Oklahoma, where he became one of the top-notchers among the distributors. Dan Moran drafted him out of Oklahoma for service in the Tampico district of Mexico, when it was booming. McDermond moved to Venezuela four years ago as representative of the Creole Syndicate before it was merged with the Standard Oil Company of Venezuela to form the Creole Petroleum Corporation.

"Mack," who is serving his second term as president of the Maracaibo Country Club, probably knows more people and is himself more widely known, than any other man, woman, or child in Western Venezuela.

He is now planning an extensive holiday in the United States. He expects to ship his car to New Orleans via the Gulf-Caribbean Steamship Line, of Houston, whence he will drive leisurely overland to California, visiting the various oil fields of the Gulf Coast, West Texas, and the Pacific Coast en route.

ROBERT ALLEN AND
W. A. OBORNE

Rach Keeps the Gulf Well Posted

W. A. Oborne, chief scout for the Lago Petroleum Company (Standard Oil Company, Indiana) is now engaged on an extensive vacation trip into the Venezuelan Andes. He also expects to travel extensively in the uplands of Colombia before returning to his headquarters at Maracaibo.

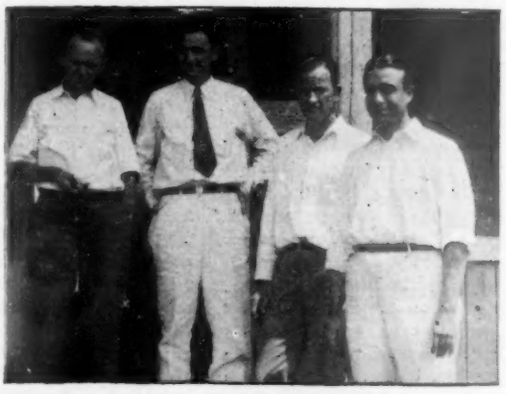
Vincent Vandiver, a technically trained man, is representative of the new order of things in the oil business. He is a geologist by profession, a graduate of the University of Missouri.

Vincent Vandiver Combines Geology With Scouting

Before going to Venezuela at the beginning of 1927, he was connected with the Standard Oil Company of New Jersey.

Left: Judson Wood, of the Legal Department, Venezuela Gulf Oil Company
Right: R. H. Lawrence, Scout, Lago Petroleum Company

E. C. Rach, a Texas Longhorn, who has strayed far from his native prairies, is chief scout for the Venezuela Gulf Oil Company, one of the Big Three companies in the Maracaibo district. He has been four years in Maracaibo, and has seen that field develop from eight million barrels in 1924 to more than 13 times that production in 1928. Before going to South America, he was connected with the Gulf Production Company in Texas fields.



S. H. Cathcart, subsurface geologist; Vincent Vandiver, chief scout; L. K. Martin, scout; W. B. Allen, production department, all of Creole Petroleum Corporation, Punta Leiva, Venezuela

Delivered at Safety banquet, sponsored by the Mid-Continent Oil & Gas Association and the National Safety Council, Shawnee, Oklahoma, May 6, 1929.

Safe OPERATION *of* AIR *and* GAS LIFTS

By F. W. ROBSON

IN order to properly state the tentative procedure in connection with the installation and operation of gas lift stations from a standpoint of safety, it may be expedient to begin with the authorization by the management of an organization for the immediate application of the lift method to developed property or the subsequent application to developing properties.

Safety shall not only include reference to the normal functioning and protection of human life but also the proper care and inspection of equipment.

After the management has issued orders to begin construction, all foremen together with the surveyors should be requested to congregate on the property for the purpose of consultation and the selection of a site for the location of the lift station. Safety really does not begin with the consideration of location, but at the time when each foreman departs in his automobile from any particular place to be present at the field conference. All rules of the highway should be strictly observed while enroute, excepting where a sacrifice of rights will aid in accident prevention. Of course, a centrally located site should be chosen if the selection does not confine the future station to a low relative elevation in comparison with the remainder of the property. The wisdom displayed in choosing a high area is not only reflected in a resultant safe distance from the oil stock tanks, which should always be located on the lowest levels of the lease so as to effect proper gravitation in oil lines, but that operation may be maintained while uncontrolled volumes of gas accidently released by future development are naturally seeking lower areas on the property. A tract large enough for the proposed station plus reasonable extensions should be enclosed with a fence composed of at least four barbed wires with gates interspaced at vantage points for access to the premises. Gasoline storage tanks should be confined within this fence but at a safe distance, at least 100 feet, from the station proper with the central axis of the tank parallel to the center line of the compressor building, so that in the event of failure of the gasoline storage tank the resultant vapors would not be blown in the direction of the station; it is preferable also to locate gasoline storage at a reasonable distance beyond the end of the station, and to install gasoline pumping equipment near the gasoline storage tanks.

The water circulating tanks in which the cooling towers are built should be located not closer than 200 feet from the station with super-elevation in the ground of three or more feet if possible. The cooling tower should also be on the leeward side so that water spray will not settle on the dust filmed insulators above the transformers of an electrically powered lift station; oftentimes this has caused short circuiting and is a source of firing transformer poles. Control gate valves for by passing the water directly into the tank without resorting to circulating water over the tower, should be installed at the ground line; this feature together with the float indicator of water depth in the tank removes all necessity for steps or ladders. For various reasons it is well to set transformers at least 25 feet from the building line. The compensators or starting boxes for electric motors should be so placed that a gas proof wall containing glass windows will protect the compressor room from any possible flash occurring as a result of faulty compensator functioning. Intake field scrubbers receiving gas from the gathering system should be equipped with manometers in order to ascertain the exact pressure or vacuum obtaining and said scrubbers set near the high pressure header system. The high pressure headers should be immediately adjacent and parallel to the main compressor building in electric stations, with auxiliary gasoline equipment, such as aftercoolers, and high pressure accumulators, located between the header and meter house, but very close to the high pressure header. All stations should be equipped with telephonic communication. Obviously, a great amount of thought and consideration should be exercised during the layout design, with special concentration on compact and almost instant accessibility of all controls; sufficient exits from the building and proper ventilation.

Safety rules regarding the loading, transportation and unloading of material and equipment should not only be issued but should be enforced. Extreme precaution should be exercised constantly in laying all pipe lines, installing drips, heaters and check valves there-in; as well as safety methods applied to all other features during construction of the lift station together with the placement of the well separator or trap and appurtenances thereto.

Procedure during the construction period requires that no smoking be permitted closer than 100 feet to the station until such time as the fence lines have been definitely defined by setting the posts, after which smoking will be prohibited within the fenced areas, although no danger is apparent. The enforcement of this regulation may seem drastic but experience has taught that immediate impressions regarding safetly are established resulting in safety minded progress to the completion of the project. Maintenance of tools in first class condition, discarding those which have been broken and fully depreciated is strongly advocated. In conjunction with high pressure pipe lines and headers, only number one or number two reconditioned high pressure fittings of sufficient design should be specified; thoroughly cleaning all threads and tightly assembling all connections are very essential. Overtaxing of human strength is averted by precautionary measures such as prescribing one man to each inch of diameter in carrying pipe, although a lesser number could lift one joint. Proper clothing and a positive requirement for sufficiently thick and well-conditioned shoe soles to prevent nail punctures, as well as absolutely forbidding the use of thin rubber boots are features which contribute to safety progress. In placing responsibility for accidents to his subordinates directly on the gang-pusher, his attention to the proper supervision of the work at hand is assured and it can be assumed that he will do his utmost to prevent any injuries. In this connection all construction forces should be assembled periodically, once a week preferably, for instruction and discussion regarding safety practice and improved working methods.

The basic prerequisite in establishing orderly and economic operation is proper organization. A chief operator should inspect only the number of stations which he is capable of visiting daily and report directly to the director of the lift division. A corps of repairmen superintended by a chief mechanic should be subject to the immediate summons of the chief operator as well as emergency calls from other vested authority. Great care and judgment exercised in the selection of stationary operators insures a greater degree of safetly and protection to equipment, ultimately; the division amenable for operation being held strictly accountable for the employment and discharge

of men in this department of lift practices. When the magnitude of a gas-lift station reaches such proportions that the capacity of a single operator is taxed, it is not only economy to employ an assistant but also a contribution to freedom from danger. Particular safety devices such as relief or commonly called pop-valves need periodical inspection and the expense of a traveling maintenance crew, trained in reconditioning such important equipment as well as replacements of broken gauge glasses, gauge glass guards, valve adjustments, etc., is well justified. Meter maintenance experts are invaluable as accurate data, with reference to pressures and volumes, are desirable for safe operation and economical recoveries and a constant definite knowledge of conditions obtaining. There is no need for guess work when a sufficient number of production engineers are testing wells daily for efficient running rates, and together with farm or lease superintendents direct the starting or initial placement of wells on the lift method of recovery. An adequate office force should be employed in recording all necessary information relating to safety, accidents, investigations, operation and preparation of details for distribution in preventing recurrences of injuries; accident reports should be issued promptly. The strength and alertness of an operator will naturally subside after an eight hour period of proper application of duties and for this reason three tours or shifts in 24 hours are strongly advocated, with one shift of rest per week for each operator.

In the beginning, when pioneering in the Seminole area during the fall of 1926 with the present commercially successful method of lift, and for some time thereafter, air was used as the agent for compression and injection into the wells. The greatest advantage in the use of air for lifting is the constant, unchanging, atmospheric pressure at the intake of the compressors; but it is extremely dangerous when mineral oil lubrication is employed in the compression cylinders. Air is not only more hazardous than gas in the application of the lift method of crude oil recovery but is wasteful of resources and is a direct preventive of conservation; for, when the gas is diverted to the air through the riser pipe from the separator as must be done when air is injected into the wells, all gasoline content therein is lost forever. Heavy laden gas will also settle to the ground, the action of which presents additional measures of safety to be solved.

Stable oil is safer in stock tanks with a lessened tendency to eject high-end vapors, and this characteristic is applicable to oil which has been produced by recycling gas. The cause for air being more dangerous than gas, is readily understood by the statement that approximately 15 per cent. of gas mixed with 85 per cent. of air constitutes an explosive combination and where a station may be compressing air, that only 15 per cent. of gas, which can be created from lubricationg oil vapors or faulty auxiliary gas line connections to field scrubbers when pulling air through the scrubber instead of the direct intakes of the compressors, is necessary to effect an explosive mixture; while, if gas is being compressed, 85 per cent. by volume of air must be taken into the system before a dangerous operating condition exists. The majority of explosions which have resulted, occurred during the process of compressing air. Safety in compressing air can be established by the use of vegetable oil, which emits no combustible vapors, for lubrication but this practice has caused excessive valve trouble in some locations and abnormal lubrication costs in others, and, as has been stated before, defeats conservation. Input meters located near the lift station in a common meter house lend to safety, for the operator may determine by inspection if proper conditions as specified by the production engineer obtain.

It is well to state here that a sufficient number of electric lights, enclosed in vapor-proof globes with all switches placed outside the compressor room, should be advantageously located for night operation.

A check valve interplaced in the input line near the well will prevent oil from filling the input line and backing up into the station in the event of a tendency to flow through the tubing during any shut down period. An absolute rule should be established requiring the installation of a check valve in the gravitational oil line between the separator and the oil stock tanks, as the failure of the float valve on the separator has caused this to be a source of pulling air through the oil stock tank into the station and the occurence of several explosions and subsequent loss of at least one compressor plant as well as pulling several gas tight oil stock tanks. Relief valves on the separators or traps are necessary for the release of excessive starting pressure, while a check valve in the relief line from the separator will prevent air being pulled into the lift station from this source.

Gas Lift Station Regulations

The personal duties of an electric gasolift operator may be summed up in the following rules:

Air-Gas mixtures cause explosions. Use constant caution to avoid Air-Gas mixtures.

Matches, flames or smoking absolutely forbidden within fence lines.

In event of fire, let all electrical equipment run; close main gate on recycle gas lines.

Persons entering fenced area must have business inside. Never leave the station while on duty. Doubling tours not permitted except in an emergency.

Never stand near compressor heads or headers except for duty.

Dispensing of gasoline to any person will not be tolerated.

Complete and neat reports are required.

Save, think, co-operate and be benefitted. Be courteous.

Operation and Maintenance

Operator will be held responsible for operation and maintenance of all compressors and auxiliary equipment while on duty.

Drain all field scrubbers immediately after beginning tour.

Station, premises, compressors and other equipment must be clean, constantly.

Oil soaked rags and waste should be deposited in a container located near a fence corner.

Maintain the water circulating pump in a clean and properly packed condition.

Blow intercoolers and aftercoolers at proper regular intervals.

Drain all scrubbers and drips at proper intervals.

Cylinders should be warm to effect good lubrication.

Inspect crankcase oil, compressors, belts, etc., daily; and add oil only when shut down.

Oil motors with light or medium oil only, and when motors are shut down.

Direct strict attention to "Instructions for operating electric motors."

Compensator or starting lever should never be thrown into running position until motor has attained full speed.

Effect full motor speed before opening header valve against load. Never "Inch the motors." Use hands, or bar for slight rotations.

Gauge glasses must be covered with wire screen protection at all times.

Lubricate all stop cocks weekly, if necessary, for uniform operation.

Avoid grease on fly wheels so that belts will service properly.

Insist on station Inspector lifting all relief valves weekly for pressure test "pop-off."

Gasoline storage tanks must not maintain in excess of 25 pounds working pressure.

Never carry more than five inches vacuum on any field scrubber.

By-pass cooling tower during freezing weather conditions.

Reduce water circulation in aftercoolers when freezing difficulties arise.

Inspect well input hourly so that proper pressures and differentials may be maintained.

Full time must be given to the complete operation of the station.

No personal work of any nature whatsoever will be permitted while on duty.

Automobiles must not be driven or parked within fence lines.

Confer with station inspector regarding any trouble. Well testers are vested with authority to change compressor operations. Notify gas lift department, if communication is possible, when any appreciable amount of gas from high pressure system is to be used, so shortage can be supplied at source.

Call gas lift office for any emergencies or trouble.

(Continued on page 114)

[THIRD PART]

ROTARY FISHING *And* FISHING TOOLS

By HARRY PENNINGTON
Mechanical Engineer

THE next class of fishing tool consists of those designed to enter lost pipe, tool joint, coupling or drill collar.

Of this class, the spear is the most widely used and in spears there are numerous designs. The bull dog spear—the original tool of the type, adapted from standard tool practice—takes hold and will not let go, although the teeth may be worn off by rotation so as to let go, or mud may be circulated until it clogs the slips and prevents them from catching.

In rotating, however, the fish may be cut in two, hence this type of tool is not as safe to run as the let go spear. The spear of Figure 15, modified from a standard tool design by boring out the upper end and threading, is a good example of the bull dog spear. The slips are mounted on carriers attached to an upper ring, forming an assembly, and a coil spring presses the assembly down to engage the slips after the tool has entered.

The spear of Figure 16, a spear that may be washed down, or drilled through a bridge in the hole, is also of the bull dog type. The slip for this tool is shown in Figure 17. A key, placed along the taper of the tool, slides through the slot of slip, so that the slip may be turned with the tool, and if the fish cannot be pulled, the teeth of slip may be worn off by rotating. However, when the teeth on slip are machined in the form of a left hand thread, right hand rotation of the pipe used for fishing will unscrew the slip out of the fish to let go.

The type of slip shown has a small limit of expansion, compared with the slips of Figure 15 and when the inside diameter of the fish is not known, the spear of Figure 16 may be made in multiple; the lowermost slip, for instance, may be designed to enter the upset of drill pipe; another slip and another taper, superimposed, may be larger in diameter to catch the inside of drill pipe in the body of same where there is no upset; and a still larger diameter slip may enter and catch, for instance, a drill collar inside and above the pipe threads.

And, when the weight of drill pipe is not known, and the inside diameter of same, the multiple slip spear may be run with slips to suit the inside diameters known to be in the hole, running the smallest diameter slip on the bottom of the tool.

The wash down trip spear of Figure 18 is made with slips like Figure 16, but the mandrel of Figure 19 may be lowered inside of the pipe used for fishing to make the spear let go. However, since a wire line is necessary for lowering the mandrel inside, a sand line is necessary, and a sand reel, else the drilling line must be run off of the drum and the sand line run on to lower the mandrel—a somewhat laborious operation compared with other types of spears shown in this paper.

This spear may be drilled through a bridge, or through boulders on top of the fish, but after the fish has been caught, there is no means of establishing circulation or pressure down through lost pipe.

Packer Type Spear

The packer type of spear of Figure 20 is of the releasing type. If the fish cannot be pulled, this spear is loosened by pulling up slightly and rotating the pipe used for fishing, when the tapered mandrel screws down the inner mandrel, the

FIGURE 16

FIGURE 17

FIGURE 18

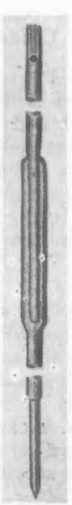


FIGURE 19
MANDREL

FIGURE 20

FIGURE 21

FIGURE 22

key in the slip slot acting to hold the tapered mandrel stationary with the slip, while the inner mandrel rotates.

Rubber packing, shown below the slip, serves to prevent circulation from passing down alongside the tool, upward and out of the lost pipe, so that circulation or pressure may be established down the lost pipe for loosening a frozen section below. This spear, however, cannot be used for drilling through a bridge because a fish tail bit, screwed into its lower end, turns the inner mandrel, screwing it down the outer tapered mandrel, which prevents the slips from gripping.

The spear of Figure 21 and Figure 22 is of the releasing type. The slips are made from a hollow cylindrical section of steel, turned and cut as shown, forming a slip assembly. Normally, the slips are smaller in diameter than the upper shouldered section of slip assembly so that when entering, the slips do not contact the inner wall of the lost pipe. The upper shouldered section of the slip assembly, however, does contact the inner wall of lost pipe, the construction being such that the upper end is springy, as well as the lower slip end.

Then, the inner mandrel may be moved vertically or rotated, while the slips are stationary, affording means of setting and releasing the slips at will. The tool is run in the hole with the slips in position as shown in Figure 21, and when inside of lost pipe, a quarter turn rotates the inner mandrel so that the keys will slide between the slips when a pull is taken, setting the slips against the inner wall of the fish, as shown in Figure 22. If the fish cannot be pulled, letting down the pipe used for fishing, slightly, and again rotating one quarter turn, the vertical keys are placed under the slips again as in Figure 21, when the tool may be withdrawn. This tool may be set and released as many times as necessary without coming out of the hole.

Fitted with a bit as in Figure 22, this tool may wash down and drill through a bridge and enter a fish when the same is reached.

No packing means is shown in the illustrations, but this tool may be provided with the same, for establishing pressure or circulation down the inside of lost pipe to assist in loosening a frozen section, or lifting by pressure, from pump.

Taper Tap or Screw Grab

Another type of entering tool is the taper tap or screw grab, shown in Figure 23 in the plain type with an ordinary pipe thread for attaching to the pipe used for fishing.

This tool, lowered and screwed into a hole in any kind of fish, takes a firm hold by cutting threads on the interior of the fish. Drill pipe, either in the body or in the upset, a tool joint, a pipe collar, drill collar, may be entered and screwed into with the taper tap.

It cannot, however, be released readily, but when the pipe used for fishing is made up tightly by catheading when going in the hole, backward rotation may loosen the tap, although this method requires skill to prevent backing the upper pipe off and leaving a section of it in the hole.

Figures 24 and 25 show modification of the plain type. Figure 24 has a tool joint connection, which forms a shoulder that prevents going further than the same, down inside, if the shoulder is greater in diameter than the hole in the fish.

The taper tap of Figure 25 is made for catching two inner diameters in the fish as for instance a short section of pipe immediately above a collar and interior upset. If the pipe is not screwed into, lowering further into the upset will allow the lower, smaller end of tap to enter and screw in to take hold.

A tool joint tap is made similar to the above, but with threads to mate those of the tool joint; all tool joints now being threaded through the box especially for fishing.

If pressure is desired below, through lost pipe, to establish circulation, or to assist in lifting the lost pipe, the tap of Figure 23 may be screwed down inside until the flutes pass entirely inside, thus entirely closing the upper end of lost pipe, when circulation may be passed through the taper tap, there being a hole through all designs of this tool, especially for the purpose.

If the tap cannot be thus screwed in, only a limited amount of pressure can be passed down inside of lost pipe on account of the openings through the flutes of the tap.

In fishing with any kind of tool, it may be necessary to drill down to the fish, through cavings or boulders that have fallen into the hole. As a matter of precaution, cavings should be drilled out anyway and the hole re-conditioned by circulating and rotating. In many cases, however, the hole will cave again while the bit is being withdrawn to run a fishing tool, making it necessary to drill down to the fish and then do the fishing without a round trip. Some of the tools—those of the spear type—may be fitted with a bit to do this, but others cannot, making fishing somewhat more difficult in caving hole.

Guides

All tools that enter or go over a fish may be provided with some kind of a guide for facilitating entrance.

In the tools that go over, the socket, as shown in Figure 26 may be fitted, the one shown being adapted from standard tool practice by boring out and re-threading the upper end for pipe. The sockets of Figures 1, 3, 5, 6, 7, 8, 10, 11, 12 and further examples. In these, a tooth is usually cut so that after the fish has been contacted, rotation will usually bring the upper end below the tool.

The bowl for overshots and other tools of Figure 27 is an excellent example, being made very strong so that it cannot be easily damaged when long strings of fishing pipe are necessary to get at the fish.

Tools that enter may also be provided with a guide for entrance, that of Figure 28 showing a taper tap surrounded by a combination wall hook and socket. When the tooth formed at the lower end of this tool is belled out slightly, it has a wall hook effect, catching pipe against the wall and straightening the same up so that the socket portion may then go over. Usually, however, this type of tool cannot be run below the upper end of the lost pipe because the diameters of hole and fishing tool will not permit.

Cavities

In hole that has caved, pipe whips around in the cavity formed, more than in straight hole, hence twist off is more likely to occur where there is a cavity. Weight, on top of the bit will also flex pipe out into a cavity, setting up further danger of parted pipe. The upper end of drill pipe opposite a cavity, will always fall into the cavity, making it difficult to enter or go over when fishing.

It is well to log the approximate position of cavities, if possible. When a cave occurs, it usually bridges immediately below a cavity, and when a bridge is drilled out, it should be marked back on the log at the depth found, for reference if fishing is subsequently necessary anywhere in the hole.

To straighten pipe out into the hole to catch it, the wall hook may be used, of which there are several types. The hook shown in Figure 29 is an example, in which the hook itself may bring the pipe out, without any other fishing tool, for the hook, as in this case, should always be made to fit around the pipe and catch under the shoulder of a pipe collar or tool joint.

If blank pipe is up, the wall hook must be long enough to reach below the collar, without wedging the upper pipe used for fishing, down alongside the fish, or, if the hook is made with a hole through the upper end, through which lost pipe may enter, the hook carrier may be made shorter.

In the latter style the upper end of hook may be screwed into an overshot of some kind, so that when hooked and straightened out in the hole, lost pipe may then enter the overshot through the upper end of hook.

Fishing for a fish tail bit point, that may interfere with rock bit work, or any other kind of drilling, may be done with a basket as shown in Figure 30. Flat pieces of steel, or long pieces may be picked up with the basket by setting down lightly, rotating for a short time, then letting down and rotating to close the teeth.

But if the fish is in such shape that it will not end up readily for going over, a rat hole may be drilled as shown in Figure 31, into which the fish may fall, and end itself up, so that a basket fitting the rathole may be run to go over, when the teeth may be closed and the fish brought out.

A diamond point bit will enter pipe and spread it, taking a friction hold, although no great pull can be taken with this style of fishing tool, for the pipe may spread further and let go. No diamond point should be used that would spread the pipe ovally into the well wall, of course.

(Continued on page 75)

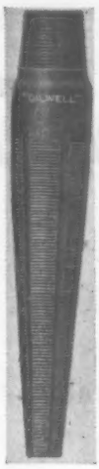


FIGURE 23

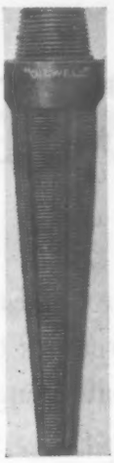


FIGURE 24

FIGURE 25

FIGURE 26

FIGURE 27

FIGURE 28

FIGURE 29

FIGURE 30

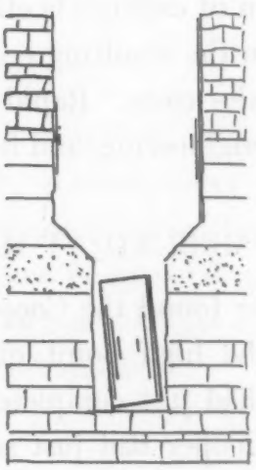


FIGURE 31

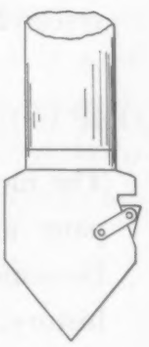


FIGURE 32

FIGURE 33

FIGURE 34

FIGURE 35

FIGURE 36

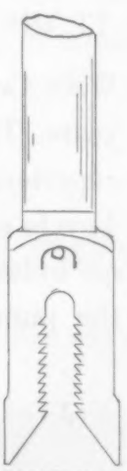


FIGURE 37

COOPER AND BESSEMER

UNITED FOR SINGLE PURPOSE

The C. & G. Cooper Company and the Bessemer Gas Engine Company have combined for one, single, primary reason: to offer the Oil and Gas Industry greater service and greater engine values than ever before obtainable at any price.

ELIMINATES DUPLICATION OF EXPENSE

Recently there has been a tendency for the Cooper and Bessemer lines to overlap. Now, by consolidation of companies, this duplication of expense is eliminated. Power users are bound to profit from the resulting economies in manufacturing, engineering and sales costs. Rapid strides will be made in the way of research, engineering, and field service.

COMPANIES MERGED AT HEIGHT

The merger found the Cooper company and the Bessemer company at the high point of their individual business success. Bessemer had just completed its largest month's production in history. Cooper had just secured the largest single order ever placed for gas engines—18,000 horse power.

127 YEARS' COMBINED EXPERIENCE

With Cooper's 96 years of engine-building, and Bessemer's 31 years, The Cooper-Bessemer Corporation inherits a combined experience of 127 years. Cooper has long been the leader in the 4-cycle engine field, especially for service in the natural gas and oil industry. Bessemer has held an equally strong position in the pumping and drilling engine and the 2-cycle compressor

Unite for Greater Service

engine fields—also in the marine and stationary Diesel engine fields.

OWNERSHIP REMAINS THE SAME

The individuals responsible for Cooper and Bessemer success are still the largest shareholders and retain active control. The management of the two companies has been consolidated. Engineering and manufacturing efforts have been unified and standardized. Sales offices are under one man's direct control, but the Cooper and Bessemer sales personnel will be retained.

LINES COMBINED AND STANDARDIZED

Cooper, Bessemer, and Hope engines will be manufactured in standard sizes up to 1500 B. H. P. to meet every condition of service. The combined lines will include small drilling and pumping engines, 2 or 4-cycle compressor engines, vertical or horizontal engines for general power purposes, Diesel oil engines for oil pipe line and electric power generation.

FRIENDLY SERVICE WILL CONTINUE

No matter when you buy your Cooper, Bessemer or Hope—you will get the most advanced, the most reliable, the most economical unit of its type. The same personal contacts, the same friendly service and frankness that built our business will continue. That is our pledge.

THE COOPER-BESSEMER CORPORATION

FORMERLY

The C. & G. Cooper Company and The Bessemer Gas Engine Company

MT. VERNON, OHIO PLANTS GROVE CITY, PENNA.

Safety in Operation *Would Reduce* Compensation Rates

By STODDART SMITH

Safety Engineer, Associated Indemnity Corporation, Dallas, Texas

WHEN you calculate workman's compensation insurance premiums covering Texas operations, and compare them with the premiums of five years ago, there is a disheartening realization that the cost has increased tremendously. The base rates affecting drilling operations have doubled; those affecting casing head plants have increased 75 per cent., and those applicable to lease and pipe line operations are 30 to 50 per cent higher. The cost of workman's compensation insurance has become a serious problem to many oil men, and the causes underlying this spectacular rate increase are worthy of analysis.

The raise in rates has not been caused by any change in the benefits provided for injured workmen under the compensation law. It has been caused solely by a remarkable increase in accident cost, which first became apparent in the record of the 1923 policy year.

The present Texas rate level is about twice as high as it is in Oklahoma and California, although the benefits provided under the latter laws are just about equal to those of Texas. The difference in rates is costing Texas oil operators many millions of dollars each year, unnecessarily. We say "unnecessarily," because the situation can be corrected, and the amount of money involved should certainly be worth the effort.

The workman's compensation rate making power in Texas is vested solely in the hands of the State Casualty Insurance Commissioner, and the insurance carriers have no voice or control in rate establishment. The rates are based, in the case of the oil industry, upon the Texas record alone. The commissioner requires all insurance carriers to file a very detailed and complete record in regard to losses, payrolls, and premiums, divided by each class of operation. This mass of data is combined, and the commissioner then has before him complete information in regard to actual losses and premiums developed by the entire industry in Texas. From this data or experience, rates are determined. The commissioner is required by law to make a fair, just and adequate rate, and to make each business or division of industry bear its own losses.

The oil industry itself, and its insurance carriers, are to blame for the increase, and if the situation is ever to be corrected, the oil industry and its insurance carriers must make the correction.

In 1923, the drilling contractors, in particular, were sailing on balmy seas as far as compensation insurance was concerned. They were paying a rate of $5.65 per $100 dollars of payroll, and apparently had no thought or care for the future. In those days (and it still prevails in some quarters), the general idea seemed to be that money paid to insurance carriers was gone forever, and that anything employees or doctors got out of the insurance company was just that much return on the investment. It was assumed by many operators that the insurance companies contributed nothing to the business, and deserved no consideration, either in connection with the adjustment of losses, or the payment of premiums. Many employees were directly encouraged by employers to get everything possible for minor injuries, and to demand more favorable than just settlements for major ones. Regardless of the merit of the case, in most instances the employer was "lined up" on the side of the claimant, and many threatened the insurance company with cancellation of the policy, unless the case was settled "right."

In addition, compensation insurance medical payments afforded an excellent method for certain operators to pay off obligations to friendly and generous doctors, so regardless of size and amount, the medical fee was always "all right." Incredible as it may seem, in 1923 the cost of compensation benefits to injured workmen increased approximately 80 per cent. and the cost of medical work increased from 100 to 150 per cent.

However, the fault was not entirely with the oil industry, because the insurance carriers "fell down on the job." In 1923 the state took over the establishment of rates, and as a result of the elimination of initial price competition, the carriers seemed to think that the only competitive weapon left was service. They seemed to think that they could only hope to hold their own, or to obtain additional business by giving better "service" than their competitors. "Service" came to mean compliance with the employer's wishes in every particular, as far as handling of claims was concerned. The oil industry readily accepted this situation and became more extravagant in its demands.

There was practically no effort made on the part of the insurance carriers made to tell the oil industry that it would ultimately pay for its own losses. In fact many insurance carriers shared an opinion, prevalent just a few years ago, that an accident was caused by an avenging Providence, and that no human effort could effectively prevent accident occurrence.

No Effort Toward Safety

The insurance companies concentrated on getting business, and paying claims, and made very little effort to teach prevention. They made a tremendous mistake in their methods of handling the business, but they have paid heavily for it.

The situation which existed in the fields was unfortunate. Times were good, and insurance cost was a minor consideration. Due to the fact that no one had ever made any extensive effort to advise the oil men in regard to the system of determining compensation insurance rates, it was the most natural thing in the world for them to assume the attitude they did, which was largely responsible for the later rate increase. Very little attempt was made to eliminate accidents, or to make things safe. Their thoughts were concentrated on other matters, and the main thought was to get the hole in the ground as quickly as possible.

Due to an inadequate understanding of the situation, most employers regarded safety activities on the part of an insurance carrier as an attempt to dodge its just obligations, and the very few insurance companies who indulged in such activities were regarded with suspicion. Organized accident prevention was almost unheard of, and the safety idea had made very little progress. There was very little effort to make things safe, and anyone who preached accident prevention was regarded as slightly effeminate.

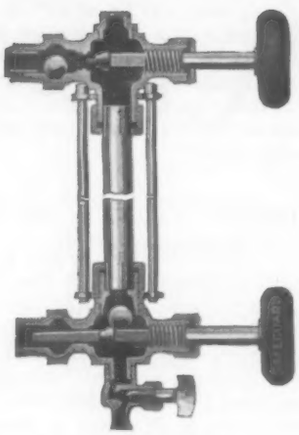
This situation continued in 1924 and 1925, and in the latter year the casualty insurance department officials rubbed their eyes when they stared at an indicated rate of over $10.00 per hundred for the 1923 policy year which had just been reported. They thought that there was surely something wrong, and that full confidence could not be placed in the 1923 indicated rate, so the drilling rate was only raised to $7.98. When the 1924 and 1925 policy year records were reported, it was found that they were practically as bad as the 1923 year, so the drilling rate was finally raised in 1928 to a basis which was justified by a record established five years prior to that time.

In the meantime, most of the insurance companies who had such an erroneous idea of "service," sustained such heavy losses that they stopped writing the business entirely, and it became difficult for a time for some operators to obtain the coverage they desired.

Prior to the time of these occurences in Texas, the legislatures of Oklahoma and California passed laws providing for state administered safety supervision. Conferences between safety supervisors and operators developed reasonable, practical standards which were adopted and

(Continued on page 86)

The LEADERSHIP of PENBERTHY PRODUCTS



Safeguard Automatic Liquid Level Gauge

Navy Type Liquid Level Gauge

Gas Engine Lubricator

Snap Lever Oiler

THE leadership of Penberthy Products is the inevitable result of years of conscientious effort to put better materials and a greater measure of skill in their manufacture.

Penberthy Products are known throughout the oil fields for their higher efficiency, greater dependability and longer life.

When you specify Penberthy Products you not only get the best but you save money in the long run. You can get Penberthy Products at your local supply house.

Screw Plunger Grease Cup

Spring Compression Grease Cup

Plain Compression Grease Cup

Plain Brass Oil Cup

PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 — DETROIT — CANADIAN PLANT WINDSOR, ONT.

Doherty Organization Expanding in Louisiana and Arkansas

SHREVEPORT, La.—A vast program of expansion which makes Arkansas Natural Gas Corporation, a subsidiary of the Cities Service Company, a Doherty company, the largest gas concern furnishing gas and operating in the states of Arkansas and Louisiana, was revealed Saturday with announcement of the purchase of additional properties in the two states and the publication of plans for a 20-inch pipe line approximately 100 miles in length at a cost of approximately $2,000,000 from the Monroe gas area to Shreveport.

Arkansas Natural Gas Corporation announced the purchase from the Industrial Gas Company of a 16-inch line constructed by the S. S. Hunter interests, and of the 12-inch and 14-inch lines built by the Latex Construction Company, connecting Monroe field to El Dorado and Camden, Arkansas. The company also acquired in the purchase all the Industrial Gas Company's gas sales contracts in that area, including the contract to supply the International Paper Company's plant just south of Camden, an industrial project.

A contract was also entered into by the purchasing company with the Industrial Gas Company for the latter to furnish gas for the purchaser from Monroe field, guaranteeing an abundant supply for these lines. This line will be connected with a new 12-inch El-Dorado-Emmett line of the Arkansas-Louisiana Pipe Line Company, a subsidiary of the Arkansas Natural Gas Corporation, this line tieing in with the main trunk line from Shreveport to Little Rock.

Arkansas Natural Gas Corporation also announced that the Public Utilities Corporation of Arkansas, one of its subsidiaries, has also bought the franchise and distribution system of the Industrial Gas Company at El Dorado.

Besides furnishing gas to the Southern Cities Gas Company, also its subsidiary and which holds the franchise for Shreveport, the Arkansas Natural Gas Corporation will also furnish gas from its 20-inch Shreveport-Monroe line to the Dixie Gulf Gas Company, a Moody-Seagraves subsidiary an agreement having already been signed for this.

Gas from the Monroe line will be sold to the Dixie at its compressor station near Waskom, Harrison County, Texas. This gas will be furnished to the towns and cities in South and East Texas where the Dixie Gulf Gas Company has gas franchises.

Arkansas Natural Gas Corporation has entered into purchasing contracts with practically all the major gas producers in Monroe and Richland Parish for gas, securing approximately 250,000 acres of gas producing land, for its systems.

Among the companies with whom purchasing contracts have been arranged in Monroe are: Palmer Corporation of Louisiana, Louisiana Gas and Fuel Company, Hope Construction Company, International Gas Company, Southern Carbon Company, Union Carbon Company, Natural Gas Producing Company of Louisiana, Industrial Gas Company and Dixie Gulf Gas Company.

Another Gas Field in Southwest Texas

Houston.—Mission Drilling Company has apparently proven another substantial gas field in northern Bee County, near Pettus, in completing Ray 2 on Saturday for 45 million cubic feet of gas from a sand topped at 2830 feet, and drilled to 2860 feet. The well has been closed in.

United Gas Company, parent company of Mission Drilling Company, has 16,367 acres in its acreage block in this area, securing this property early in the year from H. E. Hewitt and associates, who had previously drilled Ray 1, a well that encountered the same prolific sand at 2835-75 feet. The Ray 1 has a rock pressure of 1200 pounds. Ray 2 is located 600 feet northeast of Ray 1.

Clevenger Goes With Gas Association

Keith Clevenger, for several years connected with the Empire Gas and Fuel Company, of Bartlesville, Oklahoma, as public relations representative for the natural gas interests of that company, and more recently as director of information service for the company, becomes the director of publicity and advertising for the American Gas Association with headquarters in New York City, according to an announcement by Oscar H. Fogg, president of the association.

Keith Clevenger

Mr. Clevenger is a product of the Southwest, having been born and reared in this section, and for the past 10 years has been actively identified with the public utility and civic life of this terrtory.

In making the announcement of Clevenger's selection, Mr. Fogg said, "We are indeed pleased to announce the selection of Mr. Clevenger for this important position at American Gas Association headquarters. He brings to the organization a wealth of varied experience that will be of untold value to the entire gas industry of North America. Mr. Clevenger has long been a prominent and active figure in the gas industry, and his advice and assistance have ofter been sought on matters effecting it."

Houston Gulf Gas Co. Earnings Up

Houston.—Houston Gulf Gas Company, a subsidiary of United Gas Company, which is under Moody-Seagraves management, reports for the first quarter, net earnings after all charges but before federal taxes of $401,444. This is equivalent to 85 cents a share on each 471,906 common shares now outstanding, of which United Gas Company owns approximately 60 per cent.

These earnings for the first three months of 1929 compare with net earnings for the entire year 1928, after all charges and estimated federal tax, of $455,389 or about 96 cents a share on the same capitalization.

Gross revenues for the first quarter were $2,153,580 and net earnings or balance available to Houston Gulf Gas Company after prior charges of subsidiaries was $1,124,615.

20-Inch Gas Line From Monroe to Waskom

Houston. — Announcement has been made here at the offices of the United Gas Company, parent company of Dixie Gulf Gas Company, of an agreement between the latter and Arkansas Natural Gas Corporation, whereby the Arkansas company will lay a 20-inch gas line from the Richland and Monroe gas fields, in Louisiana, to Shreveport and extending to Waskom, in Panola County, Texas, where it will connect with the Dixie Gulf Gas Company's trunk line at its Waskom compressor station. The line will be 100 miles in length. It should be in service before the winter of 1929.

The laying of this line will afford Dixie Gulf Gas Company an opportunity to pipe gas from the wells of producing subsidiaries of United Gas Company in the Monroe and Richland fields, to Waskom, where the gas will enter the Dixie's trunk line.

HOLDS

against ..... everything

Like that narrow Alpine pass, so famous in history as an impregnable defense, the Guiberson Spiral Bottom Water Plug withstands all attacks of gas pressure, water—everything that threatens the well from below.

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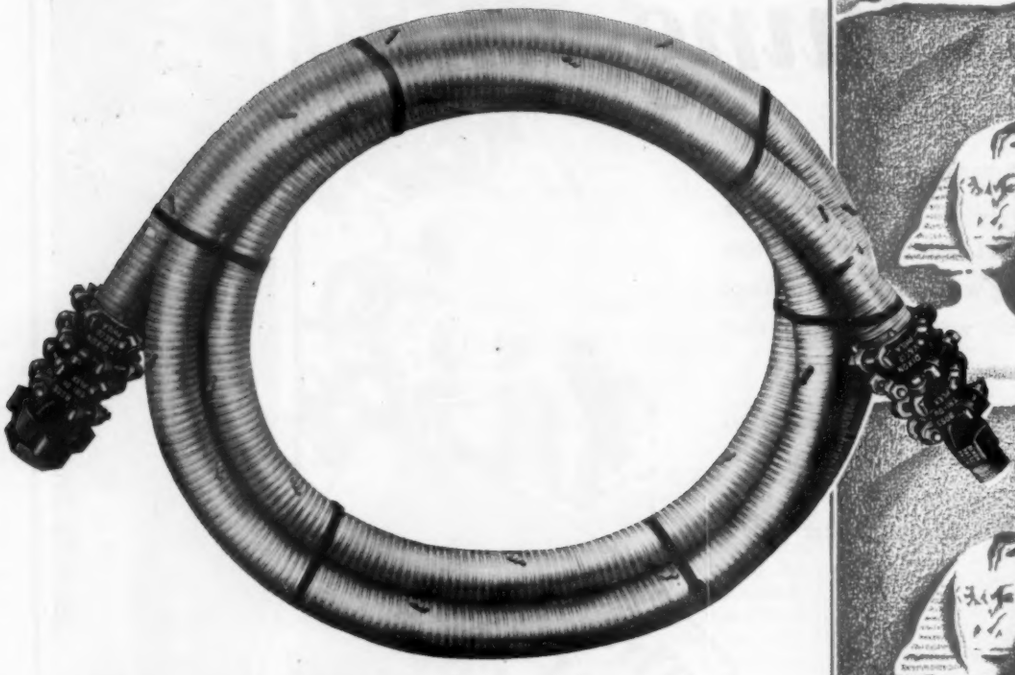

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CONTINENTAL

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Demand for Crude Revives Price Boost Talk

THE fact that a number of large pipe line companies and refiners are actually facing a shortage of crude, coupled with recent declines in daily average production, seems to lend strength to the belief that crude prices will be advanced in the Mid-Continent area at an early date. While such a move is certainly not justified at this time, it is nevertheless apparent that something will be done in this direction to alleviate the situation that admittedly confronts the companies that are big enough to influence the general market by their demands. This situation is not only prevalent in Oklahoma, but seems to be in evidence in Texas and California as well. In the case of California, however, there is little liklihood of an increase in crude prices because the situation there is still far from satisfactory. In Oklahoma and Texas, the demand is actually exceeding the current supply of crude and even though stocks aggregate a supply that is more than sufficient to meet all demands, there are a number of companies in both of these states that seem to be unable to effect satisfactory connections for their crude requirements. Even though Oklahoma operators have voted to increase the outlet of the state to 725,000 barrels daily, the talk of a possible boost in the crude market is becoming more pronounced. In the West Texas area, it has been definitely stated by many operators that they refuse to increase their production at present market prices. This is forcing the payment of premiums and may have home effect upon the posted price in the near future.

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH AVERAGE OF 1928

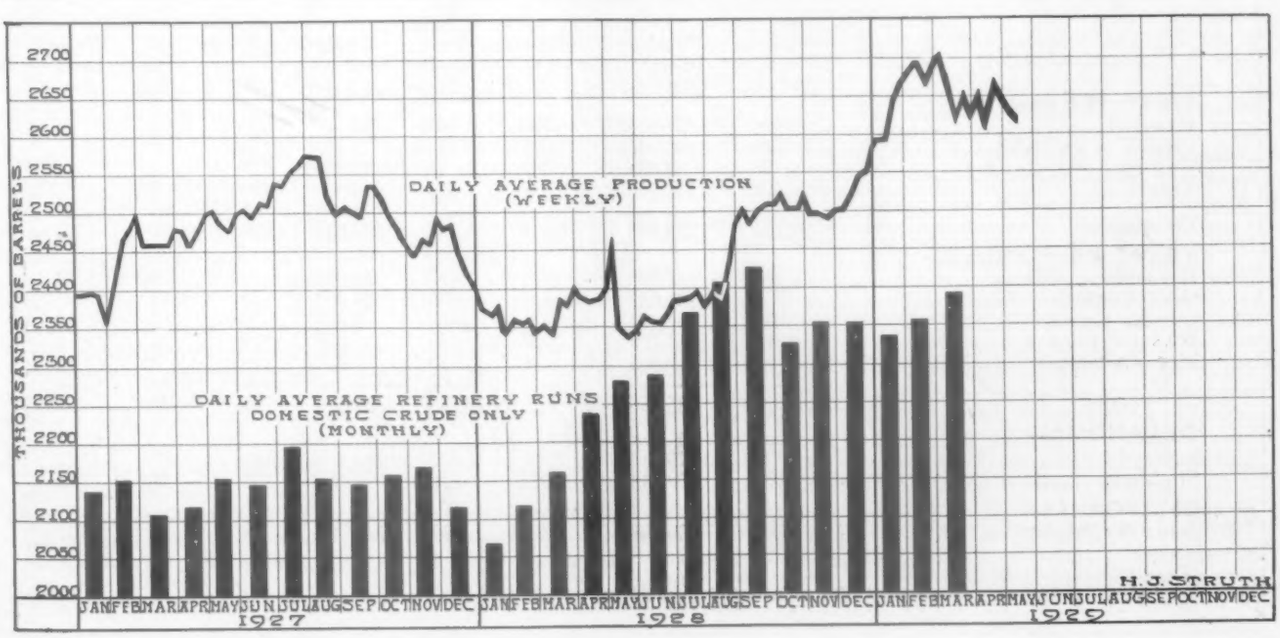
	Daily Av'ge Year 1928 (Bureau of Mines Data)	Daily Av'ge May 11, 1929 (A. P. I. Wkly Prod. Rept.)	Excess
Oklahoma-Kansas	786,585	787,650	1,065
Texas-Louisiana-Arkansas	849,205	897,600	48,395
California	633,831	758,800	124,969
Balance of United States	190,391	180,700	[1]9,691
Total United States	2,460,012	2,624,750	164,738
Mexico-Central and South America	561,339	609,249[2]	47,910
Grand total	3,021,351	3,233,999	212,648

[1]Bold figures indicate below 1928 average.
[2]As of March 30, 1929—latest date available.

Shortage Not Actual

To say that there is a crude shortage is really a ridiculous statement. There is plenty of crude available in all sections, but much of it is being closely held by the

DOMESTIC PRODUCTION AND REFINERY RUNS



companies that have ample storage facilities. It is really unfortunate that the situation cited above should prevail at this time when there is in evidence so much encouragement. Close analysis reveals that the industry is on the threshold of a new era that could easily result in making this year the best in its history. The facts prove that marked progress has been made in the curtailment of excessive production. In fact, the trend of production up to this time has given unmistakable signs that there could be a draft on crude storage of at least 20 million barrels this year. However, the outcome depends entirely upon those who control the crude markets. Regardless of the fact that some companies are having difficulty in obtaining their necessary crude requirements, it must be conceded by those of sane judgment that an increase in the posted price at this time would be accompanied by serious consequences. The time is not at hand to post an increase in the price of Mid-Continent or any other grade of crude; to do so now would be in defiance of sound economic principles. At any rate, it would not be more than a temporary relief, and what the industry really wants is permanent relief.

The results of last week were not up to expectations, due mainly to the fact that California's shut-in oil production was more than offset by the output of new wells completed, which are allowed to produce for 10 days. This resulted in an increase in California of 7600 barrels, while practically all of the other oil producing states showed declines. The only increases were registered in Kansas and the Eastern States, while the total for the United States showed a net decline of 5100 barrels. Texas registered a decline of 7350 barrels; Oklahoma, a decline of 4500 barrels; Louisiana, a decline of 1450 barrels; Arkansas, a decline of 1300 barrels; Mountain States, a decline of 1500 barrels. Thus, practically all of the territory east of California registered a combined decline of 12,800 barrels. While there has been some apprehension over the decision of Oklahoma operators to increase their combined output to 725,000 barrels daily, it is confidently believed in Oklahoma oil circles that it would really be difficult for the state to produce more than that amount of oil. If such is the case, it is a foregone conclusion that the opening up of flush areas will quickly result in a natural decline in Oklahoma's output. However, experiences of the past shake a warning finger at those who favor an advance in the crude market at this time. The fact remains that any price incentive cannot fail to result in promoting increased wildcatting, and the liklihood of success is not at all remote in Oklahoma or Kansas at this time. Increasing production in Oklahoma to meet current requirements is a logical step, but increasing the price of oil at this time would be a decidedly unwise move. Succeeding weeks will tell the story in Oklahoma and it is hoped that the talked-of price advance will not materialize and consequently mar the possibility of constructive developments later.

Oklahoma Storage Draft

During the past 10 days Oklahoma has been producing 675,000 barrels daily, with 50,000 barrels additional being drawn from storage. With the allowable outlet increased to 725,000 barrels daily, and the state expected to do little more than that, the demand and supply are expected to be about equal.

The increase in the allowable outlet was the desire of operators to equal the consumption and supply, without drawing oil from storage at the present cheap rates. A number of companies are paying premiums for their oil, which is causing the shifting of many connections.

Crude runs to refiners increased 40,000 barrels over a month ago. The gasoline market is still marking time with the price from 7⅝ to 7¾ cents for U. S. motor.

The kerosene market continues weak, due to the smaller prices in North Texas. The price is now 5¾ to 6 cents in Group 3. This is expected to increase next week if the reported large sales in North Texas are actually made.

Texas, Louisiana and Arkansas registered a combined decline last week of 10,000 barrels, bringing the excess of that area down to 48,395 barrels. This reflects a considerable improvement. With the exception of the Salt Flat field, in Southwest Texas, all fields in the State of Texas showed a decline last week which aggregated 7350 barrels. There are now a number of encouraging signs in West Texas that should eventually exert a favorable influence upon the crude market there. It is agreed among West Texas operators that Winkler County has seen its best days and will continue to show a rapid decline in the future. In fact, it has been particularly noted that new drilling is being confined to inside locations and that tests outside are meeting with little or no success. The only threatening area in West Texas now is the Yates pool and there is no doubt but that it will take a considerable price advance to make these operators produce oil in excess of requirements. Proration is really accomplishing its purpose in this prolific oil area. The Salt Flat field continues to show gains in output, but these gains are being more than offset by declines in all other areas, so that this field has not, up to now, exerted an unfavorable influence.

Recent withdrawal of The Texas Company as a marketer of crude and the balancing of crude runs with current sales to independent refineries in

Details on Critical Fields

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	570	3,016,655	5,302	583	142,560	245[1]	5	25
Church & Fields	189	203,465	1,077	187	25,140	134	.	.
Gulf-McElroy	73	57,075	782	72	12,855	179	1	2
Yates	312	2,051,750	6,576	305	90,100	295[1]	3	5
Totals	1,144	5,328,945	4,658	1,147	270,685	236	9	32
TEXAS PANHANDLE—								
Hutchinson County	1,160	551,505	475	1,013	25,015	25	6	17
Gray County	352	149,655	425	339	24,380	72	14	45
Carson County	192	62,635	326	162	6,345	39	5	19
Wheeler County	45	14,775	328	36	830	23	4	8
Moore County	15	7,065	471	13	2,770	213	2	6
Totals	1,764	785,635	445	1,563	59,340	38	31	95
OKLAHOMA—								
Seminole	1950	2,329,613	1194	1,552	282,133[1]	181	27	163
St. Louis	429	409,743	955	352	94,826	268	31	82
CALIFORNIA—								
Santa Fe Springs[2]	187	600,500	3211	117	146,000	1248	15	177

[1]Production partially pinched.
[2]Includes deep zone production. For field total add 230 wells and 25,000 bbls.

the North Texas district by Prairie Oil & Gas Company has forced a number of plant owners to seek oil connections in nearby fields.

A flat marketing charge of 10 cents per barrel above posted and pipe line tariff applies on crude sold to local refineries by the above two major companies. The Pure Oil Pipe Line Company of Texas, a Prairie Oil & Gas Company subsidiary, gathers and markets the oil produced and purchased by Prairie Oil & Gas Company in this district, and stocks have had to be drawn on to take care of heavy demands from refiner purchasers recently, or else they have had to pump oil into the district from Oklahoma via the Prairie system.

North Texas refiners have limited their premium offers to an average of 10 cents per barrel, but larger bonuses are in prospect because of the difficulty in making connections. White Eagle Oil & Refining Company has contracted for 2500 barrels daily from the Wilbarger properties of the Waggoner Estate at a 10-cent premium for its Fort Worth refinery, using The Texas Pipe Line Company's system for transportation.

The West Texas crude market situation is on a firm basis, with the majority of the major pipe line companies and a number of independent purchasers actively seeking more oil for purchase. The advance of 12,500 barrels beginning May 10 on the Yates field outlet was accompanied by the withdrawal of nearly an equal amount from the market. Simms Petroleum Company began storing 4624 barrels daily of its Yates field allowance on the above date, thereby removing a like amount from the market, while Gulf Pipe Line Company has started running all Yates field production held by Gulf Production Company, such being 13,316 barrels daily. Heretofore Gulf Production Company has sold to other companies all oil produced in the field above 9500 barrels daily.

Shipley pool, located in southeastern Ward County, is to have a pipe line and market outlet late next month through contracts made late last week by producers with plant owners at Wickett, Texas. This pool was the only one in West Texas without a market outlet, and the price to be received for the oil for the first year will involve a premium of five to 15 cents per barrel above regular West Texas postings.

California Situation Unfavorable

California remains as the most unfavorable factor in the general crude situation. Even though considerable progress is being made with proration, there are so many new wells being brought in that the total production of the state continues to be greatly in excess of actual requirements. The gain last week of 7600 barrels placed California's excess over 1928 at 124,969 barrels. While proration is said to be in effect in most of the flush fields of the state, it is noted that Santa Fe Springs showed a gain of 10,000 barrels last week, while Long Beach registered a gain of 2000 and Seal Beach a gain of 5000 barrels. On the other hand, Midway-Sunset, Elwood and miscellaneous fields showed declines. The main hitch to progress on the proration movement in California is the ruling that all new wells are to be allowed to flow for 10 days from date of completion. This is resulting in a large amount of new production that beclouds the results actually being obtained by proration. Judging from reports received from California, it was confidently anticipated that the state would register a considerable decline last week, instead of showing an increase. Regardless of the fact that much oil is shut in in California, it is apparent that real progress is being hampered by the continual drilling of new wells. Unless there is some let-up in drilling, the results of proration will be hopelessly engulfed in a flood of new production. Much depends upon the success of proration in California and until the state's output shows material signs of a decline there can be no benefit from the effort being expended to stabilize the general oil situation. The national daily average is now nearly 80,000 barrels below the peak established during the week ended March 2, and when California begins to demonstrate the success of proration the industry will begin to realize some benefit marketwise.

The light crude market in California is beginning to show a better tone, with long time contracts to refineries being sought, especially by the independents. There is no shortage of oil and stocks are expected to show an increase in both April and May, but the floating supply will certainly be small if the curtailment move carries through and the critical fields show a steady decline.

Heavy oil remains dull, with the supply equalling and probably exceeding the demand. The northern fields are chiefly responsible for heavy oil production, and they were the last to feel the beneficial effects of the present curtailment movement. Both the purchasers and producers are anxious to stabilize this branch of the crude market and look forward to a time when it may be produced profitably.

Best available figures show that about 80,000 barrels of oil is shut in, but the amount varies constantly. It will not be possible to reach the contemplated amount of 143,000 barrels and in some circles it is believed that not more than 100,000 barrels will be curtailed.

Santa Fe Springs and Long Beach are causing the greatest worry and are not down close to the minimum set by the umpire. The former is in the midst of a development campaign and new oil alone is enough to keep production far above the allowable figure for the field. At Long Beach the smaller operators in the upper sand are not anxious to reduce production from their pumping wells, while offsets to wells being produced at maximum in the deep sand are running in a sort of retaliatory manner.

The retail price of gasoline has been advanced one cent in California, making the "standard" service station price and the tank wagon price stand one and the same—19½ cents. Wholesalers are refunding three and four cents to the dealers, making the unofficial tank wagon 15½ cents. Neither the wholesale nor retail price has been stabilized, due to unsettled conditions of the past.

Commission Holds Hearing on Oil Seeps in Yates Field

AUSTIN.—Seepage oil in the Yates field, where about 5000 barrels of production is being recovered daily from "grass root wells", shallow pits and troughs along the banks of the Pecos River, has caused a controversy among lease owners as to the spacing of shallow wells and pits against property lines.

A special hearing on this subject was held here May 13 by the Texas Railroad Commission, with Clarence E. Gilmore, chairman, presiding.

This oil is originating from the regular oil horizons in the field, and finding its way to the surface, or near the surface, through defective casing seats. The Grayburn Oil Company, which has producing wells in the river bed proper, is recovering about 1600 barrels daily from the west bank of the river, adjacent to leases held by the Marland Production Company and the Mid-Kansas Oil & Gas Company - Transcontinental Oil Company interests. Marland Production Company proposed to dig a trench across its lease parallel to the river bank to trap oil in addition to that being produced from shallow pumpers, and officials of Grayburg Oil Company protested. Testimony was made by W. A. Moncrief, Fort Worth operator and chairman of the proration advisory committee; Harold Vance, production superintendent for Marland Production Company; John Choate of Grayburg Oil Company and others as to the seepage oil situation.

This seepage oil is not being included in the daily production quota assigned to the companies taking part in same. The commission is to issue a rule shortly as to Marland Production Company's right to dig the trench, and also as to whether regulation regarding spacing of shallow wells must be adhered to. Lease owners in the seepage area are to continue drilling of the grass roots wells to try and locate the wells that are causing the oil waste. While in the meantime Mid-Kansas Oil Company et al are testing casing seats on old completions as a means of locating the leakage.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1928	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
February	714,800	95,950	643,350	142,300	35,700	74,600	108,550	71,750	797,800	2,684,800	75,204,400
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April 6	673,700	97,850	668,250	150,850	35,500	73,100	110,250	71,350	777,200	2,658,100	18,606,700
April 13	648,400	105,350	644,700	154,500	35,600	72,800	110,500	67,100	776,200	2,615,050	18,305,350
April 20	673,700	109,100	649,300	150,450	35,600	73,500	110,750	72,950	796,600	2,671,850	18,702,950
April 27	663,300	109,850	645,550	159,250	35,650	72,300	111,250	65,800	787,700	2,650,650	18,554,550
May 4	676,100	111,650	639,150	160,550	35,450	72,550	112,000	71,200	751,200	2,629,850	18,408,950
May 11	671,600	114,050	636,300	154,700	35,350	71,250	113,000	69,700	758,800	2,624,750	18,373,250
Increase	.....	2,400	.....	.....	.....	.....	1,000	.....	7,600	.....	.....
Decrease	4,500	.....	2,850	5,850	100	1,300	.....	1,500	.....	5,100	35,700

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	May 11	May 4
Carson County	6,350	6,800
Gray County	24,350	25,400
Hutchinson County	25,150	25,700
Wheeler County	800	650
Others	2,800	1,800
Total	59,450	60,350

NORTH TEXAS

Archer County	16,250	16,450
Burkburnett	8,700	8,800
Electra	12,250	12,500
Iowa Park-KMA	5,500	5,450
Montague and Cooke Cos.	13,300	13,150
Wilbarger	27,000	27,300
Others	500	500
Total	83,500	84,150

WEST CENTRAL TEXAS

Brown County	8,100	8,250
Callahan County	3,950	4,100
Coleman County	3,400	3,500
Eastland-Desdemona	6,100	6,200
Jack County	1,700	1,800
Palo Pinto County	400	400
Shackelford County	12,900	13,000
Stephens County	6,100	6,200
Throckmorton County	600	600
Young County	6,500	6,600
Others	700	700
Total	50,450	51,350

WEST TEXAS

Crane-Upton Counties	46,800	47,000
Crockett County	2,150	2,100
Howard County	44,100	45,000
Jones County	5,000	5,200
Mitchell-Scurry Cos.	2,700	2,600
Pecos County	89,950	87,600
Reagan County	18,500	18,500
Winkler County	139,750	143,000
Others	2,000	2,100
Total	350,950	353,100

EAST CENTRAL TEXAS

Boggy Creek	2,600	2,800
Corsicana-Powell	7,900	7,950
Currie	500	500
Mexia	5,100	5,150
Nigger Creek	600	600
Richland	400	400
Wortham	950	1,000
Total	18,050	18,400

SOUTHWEST TEXAS

Dale	550	500
Laredo District	11,650	11,800
Luling	11,800	11,900
Lytton Springs	1,000	1,000
Somerset	1,650	1,450
Salt Flat	43,300	40,900
Others	3,950	4,250
Total	73,900	71,800
T'tl Tex. (Outside Gulf Coast)	636,300	639,150

TEXAS GULF COAST

Barbers Hill	6,500	8,850
Batson	1,400	1,500
Big Creek	2,600	2,700
Blue Ridge	3,750	4,250
Boling	1,800	1,900
Damon Mound	700	700
Goose Creek	6,000	6,100
Hull	9,050	9,000
Humble	10,950	11,700
Orange County	2,900	3,100
Pierce Junction	20,800	20,100
Raccoon Bend	4,100	3,500
Saratoga	900	1,000
Sour Lake	2,750	2,700
South Liberty	7,500	5,400
Spindle Top	28,750	31,200
Sugar Land	11,500	12,400
West Columbia	6,300	6,400
Washington County	2,950	3,000
Others	4,150	4,350
Total	135,350	139,850
Texas Total	771,650	779,000

OKLAHOMA

Braman	3,400	3,400
Logan County	11,000	10,800
Blackwell	3,900	3,900
Hubbard	2,000	2,000
Thomas	800	800
Tonkawa	10,450	10,450
Garber	5,450	5,500
Burbank	20,750	20,850
Osage (outside Burbank)	24,800	24,800
Cushing	20,600	20,550
Yale Jennings	7,050	7,050
Davenport	1,500	1,500
Bristow Slick	19,650	19,600
North Okmulgee	13,650	13,650
Lyons Deaner	7,900	7,850
Cromwell	7,950	7,900
Papoose	3,350	3,350
Wewoka	4,900	4,900
Seminole	32,850	33,700
Bowlegs	33,600	34,450
Searight	11,800	11,900
Little River	75,950	78,250
Earlsboro	61,600	63,050
Duncan District	6,400	6,500
Graham	4,350	4,200
Fox	1,500	1,450
Healdton	13,000	13,000
Hewitt	8,100	8,100
Scholem Alechem	12,800	12,900
Pearson	2,200	2,000
St. Louis	95,500	99,250
Allen	24,800	25,700
Maud	27,150	28,650
Mission	37,300	31,950
Okla. City	2,950	3,100
Others	50,650	49,100
Total	671,600	676,100

CALIFORNIA

Santa Fe Springs	170,000	160,000
Long Beach	177,000	175,000
Huntington Beach	42,000	42,600
Torrance	13,000	13,500
Dominguez	10,000	10,300
Rosecrans	6,800	6,400
Inglewood	23,500	22,500
Midway-Sunset	65,000	72,500
Ventura Avenue	55,000	54,000
Seal Beach	41,000	36,000
Elwood-Goleta	29,000	30,000
Kettleman Hills	3,500	3,500
Others	123,000	125,500
Total	758,800	751,200

KANSAS

Greenwood County	20,100	20,150
Florence-Covert	1,000	1,000
Peabody-Ebling	2,750	2,750
Eldorado-Towanda	12,700	12,700
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,000	1,000
Russell	3,300	3,250
Churchill	6,800	6,700
Oxford	4,950	5,050
Sedgewick	30,000	28,400
Others	28,500	27,700
Total	114,050	111,650

NORTH LOUISIANA

	May 11	May 4
Homer	4,000	4,000
Haynesville	5,350	5,350
Caddo Light	8,100	8,250
Caddo Heavy	3,250	3,200
DeSoto-Red River	3,850	3,900
Elm Grove	600	600
Bellevue	650	700
Cotton Valley	2,800	3,000
Urania	6,050	5,750
Pleasant Hill	500	450
Others	200	250
Totals North Louisiana	35,350	35,450

LOUISIANA GULF COAST

Bayou Boullion	200	250
East Hackberry	2,700	2,800
Hackberry	3,300	3,700
Edgerly	900	850
Evangeline	900	900
Lockport	3,800	4,000
Sorrento	400	400
Sulphur Dome	2,000	2,900
Sweet Lake	400	400
Vinton	4,250	4,000
Others	500	500
Total Louisiana Gulf Coast	19,350	20,700
Louisiana Total	54,700	56,150

ARKANSAS

El Dorado	4,650	4,700
Champagnolle	8,100	8,850
Smackover Light	6,200	6,200
Smackover Heavy	48,850	49,100
Stephens	1,000	1,050
Nevada	1,050	1,200
Lisbon	1,300	1,350
Others	100	100
Total	71,250	72,550

MOUNTAIN STATES

WYOMING

Salt Creek	30,450	33,600
Grass Creek	2,150	2,150
Elk Basin	850	850
Big Muddy	2,400	2,350
Lost Soldier	3,300	3,300
Rock River	2,250	2,500
Lance Creek	300	300
Oregon Basin	2,800	2,350
La Barge	1,800	1,800
Others	3,900	3,700
Total	50,500	52,900

MONTANA

Cat Creek	1,400	1,400
Sunburst	6,500	6,500
Pondera	2,950	2,450
Others	100	100
Total	10,950	10,450

COLORADO

Moffats (Craig)	1,400	1,150
Fort Collins	2,300	2,500
Florence	1,100	900
Others	1,750	1,750
Total	6,550	6,300

NEW MEXICO

Table Mesa	...	...
Artesia	900	900
Hogback	250	250
Rattlesnake	150	...
Others	400	400
Totals	1,700	1,550
Totals Mountain States	69,700	71,200

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Ky., and N. Y.)	113,000	112,000

PRODUCTION SUMMARY

East of Rockies	1,796,250	1,807,450
Total U. S.	2,624,750	2,629,850

D+B

DEPENDABILITY

HEATREAT

SUCKER RODS

EMSCO D+B
Protected by Steel
EQUIPMENT
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HOUSTON, TEXAS; DALLAS, TEXAS
EXPORT OFFICE: 150 BROADWAY NEW YORK CITY, N.Y.
U.S.A.

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HIGH COMPRESSION Performance in any make of Engine

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The better all-year High Compression Anti-Knock fuel for all engines!

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STOPS KNOCKS

SINCLAIR REFINING COMPANY, INC., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

Say you saw it in The OIL WEEKLY

CRUDE OIL PRICE QUOTATIONS

Revised May 14, 1929

EASTERN STATES

(Effective March 12, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.35
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Keister (Pennsylvania)	1.20

CENTRAL STATES

(Effective April 26, 1929)

Posted by Ohio Oil Co.

Illinois	1.60
Indiana	1.42
Lima	1.65
Plymouth	1.18
Princeton	1.60
Waterloo	1.25
Wooster	1.75

MID-CONTINENT

(Effective January 24, 1929)

Magnolia Petroleum Company

Under 26	.60
26 to 26.9 gravity	.65
27 to 27.9 gravity	.70
28 to 28.9 gravity	.75
29 to 29.9 gravity	.80
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.08

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

MID-CONTINENT

(Effective January 25, 1929)

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.

25 to 25.9gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

WESTERN KENTUCKY

All grades	1.68

PANHANDLE

(Effective January 24, 1929)

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.69
29 to 29.9 gravity	.75
30 to 30.9 gravity	.81
31 to 31.9 gravity	.87
32 to 32.9 gravity	.93
33 to 33.9 gravity	.96
34 to 34.9 gravity	.99
35 to 35.9 gravity	1.02
36 to 36.9 gravity	1.05
37 to 37.9 gravity	1.08
38 to 38.9 gravity	1.11
39 to 39.9 gravity	1.14
40 to 40.9 gravity	1.17
41 to 41.9 gravity	1.20
42 to 42.9 gravity	1.23
43 to 43.9 gravity	1.26
44 and above	1.29

WHEELER COUNTY

(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.70
30 to 30.9 gravity	.76
31 to 31.9 gravity	.82
32 to 32.9 gravity	.88
33 to 33.9 gravity	.91
34 to 34.9 gravity	.94
35 to 35.9 gravity	.97
36 to 36.9 gravity	1.00
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.09
40 to 40.9 gravity	1.12
41 to 41.9 gravity	1.15
42 to 42.9 gravity	1.18
43 to 43.9 gravity	1.21
44 and above	1.24

CARSON-HUTCHINSON COUNTIES

(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.72
32 to 32.9 gravity	.78
33 to 33.9 gravity	.81
34 to 34.9 gravity	.84
35 to 35.9 gravity	.87
36 to 36.9 gravity	.90
37 to 37.9 gravity	.93
38 to 38.9 gravity	.96
39 to 39.9 gravity	.99
40 to 40.9 gravity	1.02
41 to 41.9 gravity	1.05
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.11
44 and above	1.14

WEST TEXAS

(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades	.65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

Lea County and West Texas crudes	.65

Posted by The Texas Company

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE JANUARY 18, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons infields indicated)

Gravity	Ventura *	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood † Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elks Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.90	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	.94	1.01	1.01	1.01	1.01	1.01	1.01	..	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	.98	1.05	1.05	1.05	1.05	1.05	1.05	..	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	..	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	..	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	..	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.14	1.21	1.21	1.21	..	1.21	1.21	..	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.18	1.25	1.25	1.25	..	1.25	1.25	..	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.23	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.0	1.28	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
32-32.9		..	..	..	..	..	1.41	..	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9		..	..	..	..	..	1.47	1.16	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9		..	..	..	..	..	1.53	1.22	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9		..	..	..	..	..	1.59	1.28	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9		..	..	..	..	..	1.65	1.34	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9		..	..	..	..	..	1.71	1.40	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9		..	..	..	..	..	1.77	1.46	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9		..	..	..	..	..	1.83	1.52	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9		..	..	..	..	..	1.89	1.58	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9		..	..	..	..	..	1.95	1.64	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degree Gravity and above $1.65 per barrel. *Union Oil Company. †Changed March 18, 1929.

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 53*)

(Magnolia Petroleum Company)
(Effective January 24, 1929)

Mitchell County	$ .65
Howard-Glasscock County (shallow)	.65
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

MARKHAM
The Texas Company
(Effective January 30, 1929)

All grades	.90

LULING

All grades	.80

NORTH AND CENTRAL TEXAS
Effective January 24, 1929)
Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.60
25 to 25.9 gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

SOUTH TEXAS

Mirando	.80
Salt Flat	1.00

GULF COAST
(Effective January 26, 1929)

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.05
25 to 25.9 gravity	1.07
26 to 26.9 gravity	1.09
27 to 27.9 gravity	1.11
28 to 28.9 gravity	1.13
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.17
31 to 31.9 gravity	1.19
32 to 32.9 gravity	1.21
33 to 33.9 gravity	1.23
34 to 34.9 gravity	1.25
35 to 35.9 gravity	1.27
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.33
39 to 39.9 gravity	1.35
40 and above	1.37

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

SOMERSET
Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

WYOMING-MONTANA
(Effective January 25, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.36
Grass Creek	1.36
Rock Creek	1.18
Lost Soldier	.95
Lance Creek	1.38
Mule Creek	1.10
Notches	.65
Big Muddy	1.28
Osage	1.38
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.48
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43
*Lea County	.65

The Texas Co.

CANADA
(Effective April 26, 1929)

Oil Springs	2.12
Petrolia	2.05

LOUISIANA-ARKANSAS
(Effective January 26, 1929)
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company.)

27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 gravity and above	1.44

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS
(All Companies)

Below 28 gravity	.70
28 to 28.9 gravity	.74
29 to 29.9 gravity	.78
30 to 30.9 gravity	.82
31 to 31.9 gravity	.86
32 gravity and above	.90

SMACKOVER
(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

	Total Month April	Total Month March	Week Ended May 4	Week Ended April 27
AT ATLANTIC COAST PORTS—				
Baltimore	592,000	575,000	190,000	71,000
Boston	551,000	808,000	.....	143,000
New York	4,117,000	4,511,000	876,000	1,092,000
Philadelphia	1,508,000	1,214,000	315,000	125,000
Others	677,000	873,000	213,000	84,000
Total	7,445,000	7,981,000	1,594,000	1,515,000
Daily Average	248,167	257,452	227,714	216,429
AT GULF COAST PORTS—				
Galveston Districts	206,000	.....	69,000	67,000
New Orleans and Baton Rouge	752,000	1,320,000	129,000	784,000
Port Arthur and Sabine District	311,000	72,000	.....	246,000
Tampa	45,000	.....	.....	.....
Total	1,314,000	1,392,000	198,000	497,000
Daily Average	43,800	44,903	28,286	71,000
AT ALL UNITED STATES PORTS—				
Total	8,759,000	9,373,000	1,792,000	2,012,000
Daily Average	291,967	302,355	256,000	287,429

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

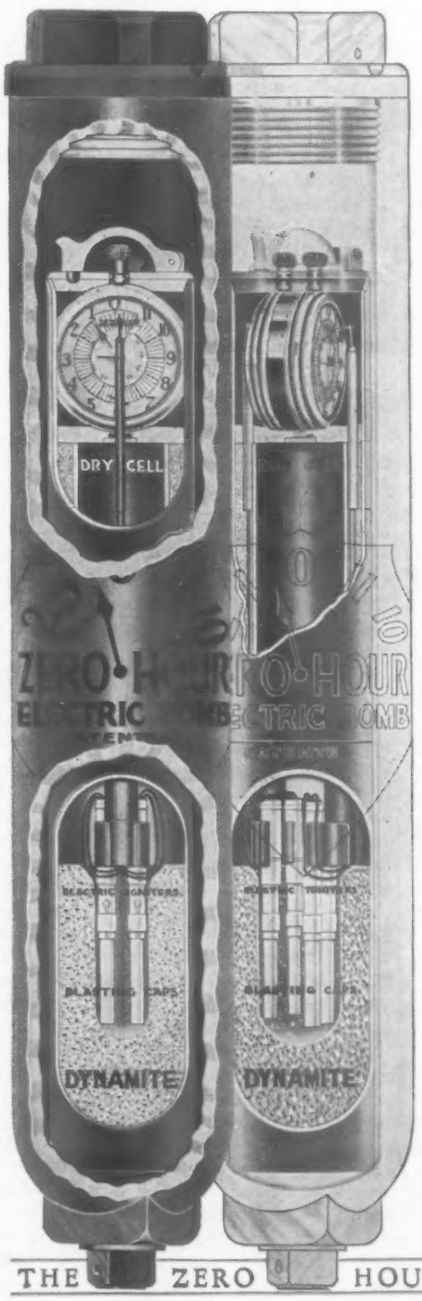
	Total Month April	Total Month March	Week Ended May 4	Week Ended April 27
AT ATLANTIC COAST PORTS—				
Baltimore	500,000	617,000	128,000	78,000
Boston	.....	30,000	.....	.....
New York	970,000	969,000	234,000	330,000
Philadelphia	197,000	576,000	.....	.....
Others	267,000	*264,000	80,000	.....
Total	1,934,000	2,456,000	442,000	408,000
Daily Average	64,467	79,226	63,143	58,286
AT GULF COAST PORTS—				
Total	22,000	.....	.....	.....
Daily Average	733	.....	.....	.....
AT ATLANTIC AND GULF COAST PORTS—				
Total	1,956,000	2,456,000	442,000	408,000
Daily Average	65,200	79,226	63,143	58,286
Distribution of Total California Receipts is as Follows:				
Crude	150,000	58,600	.....	.....
Gasoline	1,382,000	1,956,000	362,000	408,000
Kerosene District	150,000	190,000	80,000	.....
Gas Oil	224,000	252,000	.....	.....
Fuel Oil	50,000	.....	.....	.....
Total	1,956,000	2,456,000	442,000	408,000

*—Revised.

THE ONLY BOMB BETTER THAN A ZERO HOUR BOMB IS TWO ZERO HOUR BOMBS - - - - - AND THAT'S THE ZERO HOUR DUPLEX

Announcing the DUPLEX Zero Hour Electric Bomb

Plug and Socket Connectors ····· Improved Firing Pin



ONE OF our customers once made the statement that "The only bomb better than a Zero Hour Bomb is two Zero Hour Bombs." Taking him at his word, we at once determined that if the Zero Hour Electric Bomb could be made better, we would make it so. The result is the Zero Hour Duplex Bomb, which is, in effect, actually two Zero Hour Bombs in one.

Here is a bomb so carefully designed, so super-dependable and so safe to handle as to brand any other method of detonating oil well shots at once obsolete and hazardous to your investment. The new Duplex model, though exactly the same size as the earlier models, contains **two** watches, each connected through a separate circuit to two blasting caps, joined in parallel. Thus, **two** timing mechanisms, each independently powered by its own watch, are enclosed in the same metal, fluid-tight container which formerly held one only. When this duplex timing mechanism has been loaded and sealed in its metal container, the chances of the bomb's failure to function are so small that they are almost beyond computation in ordinary mathematics.

An improved "firing pin" permits the hour hand of the watch to be moved past it, either **forward** or **backward,** any number of times, in testing, without deranging it a fraction from the Zero Hour, at which it is originally set. "Plug and socket" connectors materially simplify loading and assembling operations.

We are of the firm opinion that the Zero Hour Duplex Bomb embodies the surest, safest and most economical method of detonating oil well shots that has ever been devised. Prices and full information will be sent upon request.

The Duplex and other models are obtainable through all principal torpedo companies.

Zero Hour Electric Bomb

THE ZERO HOUR TORPEDO CO., 408 COSDEN BLDG., TULSA, OKLAHOMA

Important Matters Deferred *At* Gas Convention

Kansas City delegates disapointed over inaction regarding future meetings

By H. J. STRUTH

KANSAS CITY, Mo. — While the annual convention of the Natural Gas Department of the American Gas Association, held here during May 6 to 9, inclusive, was in many ways considered one of the best meetings ever held by natural gas men, it was, nevertheless, disappointing to many of the delegates. Conversation with a large number of those attending the convention disclosed considerable dissatisfaction over the apparent inaction of officials to definitely settle the important question as to whether or not the Natural Gas Department will continue to hold its annual meetings. Prior to the meeting, it was generally believed that a vote would be taken at Kansas City, which would definitely settle this question. However, instead of bringing the matter to a final vote of the membership, a committee was appointed to study the advisibility of holding future meetings, the result of which will be disclosed at the regular annual meeting of the American Gas Association to be held in Atlantic City next October. Thus many natural gas men who hold this question uppermost in their minds and who attended the Kansas City meeting with the express purpose of voting in favor of future meetings, expressed great dissapointment over the outcome.

Final registration records revealed that about 1,200 natural gas men attended the Kansas City convention. Even before the convention was officially opened, more than 300 gas men were on hand, ready for the opening of the exhibition. This was swelled by another 400 on the opening day and reached a total of 1,000 on the morning of May 7, when the business sessions began. Perhaps never before have the business sessions been so well attended as at Kansas City. Both the morning and afternoon meetings in the Missouri Theater building found a majority of the delegates on hand and intently absorbing the many interesting addresses and instructive papers. On the official opening day of the convention, there were several important committee meetings, as well as the annual dinner of the managing and advisory committee. Unusual interest was shown by practically all delegates in the fine exhibition of appliances and equipment.

Among the prominent exhibitors of natural gas equipment were the following:

Air Reduction Sales Company, New York.

American Cast Iron Pipe Company, Birmingham, Alabama.

American Meter Company, New York.

American Steel Works, Kansas City.

Arco Company, Cleveland.

Barber-Green Company, Aurora, Illinois.

Bristol Company, Waterbury, Connecticut.

Chaplin-Fulton Manufacturing Company, Pittsburgh.

Cleveland Trencher Company, Cleveland.

Connersville Blower Company, Connersville, Indiana.

Continental Supply Company, St. Louis.

Cooper-Bessemer Corporation, Mt. Vernon, Ohio.

Crane Company, Chicago.

Cutler-Hammer, Inc., Milwaukee.

Darling Valve and Manufacturing Company, Williamsport, Pennsylvania.

Dayton Pipe Coupling Company, Dayton, Ohio.

Dearborn Chemical Company, Chicago.

Dresser Manufacturing Company, Bradford, Pennsylvania.

Fisher Governor Company, Marshalltown, Iowa.

Foxboro Company, Foxboro, Massachusetts.

Frick-Reid Supply Corporation, Pittsburgh.

Garlock Packing Company, Palmyra, New Jersey.

Hill-Hubbell and Company, San Francisco.

Hope Engineering Company, Mt. Vernon, Ohio.

Johns-Manville Company, New York.

Linde Air Products Company, New York.

Lunkenheimer Company, Cincinnati.

Metric Metal Works, Erie, Pennsylvania.

Mettler, Lee B. Company, Los Angeles.

National Cast Iron Pipe Company, Birmingham, Alabama.

National Tube Company, Pittsburgh.

Oil Well Supply Company, Pittsburgh.

Parsons Company, Newton, Iowa.

Permutit Company, Kansas City.

Pittsburgh Equitable Meter Company, Pittsburgh.

Refinery Supply Company, Tulsa.

Robinson Orifice Fitting Company, Los Angeles.

Sherwin-Williams Company, Cleveland.

M. B. Skinner Company, South Bend, Indiana.

A. O. Smith Corporation Milwaukee.

Sonner Burner Company, Winfield, Kansas.

U. S. Cast Iron Pipe and Foundry Company, Burlington, New Jersey.

Victaulic Company of America, New York.

Wailes-Dove-Hermiston Corporation, Tulsa.

Walworth Company, New York.

Webster Engineering Company, Tulsa.

Westcott Valve Company, East St. Louis, Illinois.

W-K-M Company, Houston.

Worthington Pump and Machinery Corporation, New York.

Report Reviews Progress

Following the official opening of the convention on Tuesday morning by Chairman Meals, and the invocation by Dr. Robert Nelson Spencer, address of welcome by A. I. Beach, Mayor of Kansas City, Mr. Meals presented his annual report to the convention. His address brought out many facts showing the remarkable strides that are being made by the natural gas industry and cited projected developments for 1929 that foreshadow another record-breaking year for the industry. Chairman Meals also called attention to the fact that this was the fifth time that natural gas men had favored Kansas City with their presence, indicating that they held that city in high regard as a meeting place. He also cited the fact that the former Natural Gas Association of America was organized in Kansas City. He also emphasized the part being played by the natural gas industry in conserving both natural gas and petroleum, and urged the companies represented to give serious consideration to the idea of injecting surplus gas back into depleted oil sands, as a means of storage for the future and as an aid to the recovery of oil. In conclusion, Mr. Meals stated that while the gas industry is more than 100 years old, it is evident from the progress

made in recent years that the industry is really in its infancy.

Secretary Stephany's report, following Chairman Meals' address disclosed a constant growth of membership in the Natural Gas Department. He stated that there are now 1,356 individual members, compared with 1,278 on May 1, 1928. In addition, there are about 150 company members. John M. Garard, well loved by all in the industry, presented his memorial report of those who had passed on during the year. O. H. Fogg, president of the American Gas Association addressed the delegates, pointing out the important activities of the past year and the increasingly important part played by members and committees of the Natural Gas Department. Of particular interest on the opening program was a paper by W. A. Jones, vice president of Henry L. Doherty and Company, New York. Mr. Jones reviewed the vast developments of the natural gas industry and presented some instructive views regarding future developments. He placed particular emphasis upon the enormous wastage of natural gas in the development of oil territory of the United States, citing instances where the known waste in flush oil pools would have supplied large communities with natural gas for periods ranging from 50 to 75 years.

Among the papers of particular interest were "What we are doing in Research", by H. C. Cooper; "Measuring Large Volumes of Gas", by T. R. Weymouth; "Flow Through Pipe Lines", by H. D. Hancock; "Cracking Natural Gas", by J. A. Yunker; "Natural Gas Research", by N. A. C. Smith.

"Putting Out Well Fires" was the title of a motion picture shown by the M. M. Kinley Torpedo Company, of Tulsa. This was of unusual interest, particularly to those in the producing end of the gas industry. Another point of interest was the question discussion presided over by Frank L. Chase, of Dallas. Considerable interest was shown concerning the question of how the control of gas well volumes could be determined with the least waste of gas. E. L. Rawlins, of the United States Bureau of Mines, Bartlesville, presented a written discussion of this important subject, and followed by reading N. A. C. Smith's paper on Natural Gas Research. Mr. Rawlins pointed out that tests conducted by the Bureau of Mines proved conclusively that it was unnecessary to blow wells to the atmosphere in order to determine open flow volumes. These experiments have proven that it is possible by a series of curves to accurately determine the open flow volume of a gas well from any given opening. He pointed out that bulletins are now available on this important subject to all inter-

More Recognition for Natural Gas

IF the truth of the situation that apparently exists within the Natural Gas Department of the American Gas Association is accepted in a constructive light, officials of the American Gas Association will take immediate steps to bring about a more amicable relationship between the two important branches of the industry that have become united. For some time it has been apparent that many of the natural gas members of the Association have disliked the idea of being referred to as members of the Natural Gas Department. Undoubtedly, the fact that the former Natural Gas Association of America is now designated as a mere unit in the American Gas Association has somewhat affected the pride of old-time natural gas men. At any rate, there seems to be an increasing amount of resentment within the Natural Gas Department that may have a harmful effect upon the future well-being of that organization if it is allowed to continue. This is a rather bold statement to make, after what was described as a successful convention, but the fact remains, whether it is fully realized by all concerned or not, that natural gas men desire equality in the association of which they are now an active and important part.

While there seems to be a general feeling that the amalgamation of natural and manufactured gas association activities has proven of value to both branches of the industry, there is also a feeling among natural gas men that their branch of the association is not being accorded the really important place that it deserves in the functions and activities of that organization. Some prominent natural gas men even say that the set-up is all wrong; that there should be a Manufactured Gas Department and a Natural Gas Department. Apparently, many of these men are of the opinion that the term "Natural Gas Department" carries no more significance in the American Gas Association than the several other departments, of which there are seven in all. This fact suggests a remedy that could easily be applied and would undoubtedly prove of greater benefit and satisfaction to all concerned. That remedy is to draw up a new organization chart, designating its dual membership under the respective headings "Manufactured Gas Department" and "Natural Gas Department." Under these main headings, the organization would be departmentalized according to its various sectional activities. Under this arrangement, there would necessarily be elected a separate chairman or vice-president of the two main departments, presided over by the president of the entire organization. Undoubtedly a move of this kind, involving merely the election of a chairman of the "Manufactured Gas Department," would quickly dispel the prevailing discord that seems to pervade the ranks of the Natural Gas Department.

The work that has been done by the greater American Gas Association indicates in no small way that the amalgamation of the natural and manufactured gas interests is proving greatly beneficial to both branches of the gas industry. Even with the dissention that seems to exist among many of the natural gas men, it is apparent that the Natural Gas Department is more than ever uniting its interests and activities with those of the parent association. Since the natural gas industry represents a vastly important unit in the greater gas industry, and since this branch is growing even more rapidly than the manufactured gas industry, it would seem prudent for officials of both sides to give immediate, serious attention to the question of an organization set-up that will please both branches of this great industry.

ested. A novel idea in connection with gas distribution was presented by E. A. Clark of Tulsa, in which he demonstrated how gas lines can be cut and welded quickly to meet any condition encountered in laying service lines. Great interest was shown in Mr. Clark's demonstration on the stage of actual cutting and welding of a piece of six-inch gas line the desired cut and weld being completed before the delegates in a matter of moments.

The annual banquet of the Natural Gas Department proved to be so largely attended that it was difficult for the arrangements committee to seat all of the delegates in the large ball room of the Muehlebach Hotel. This was a gala event and was made even more enjoyable by the mirthful address of Edward James Cattell, of Philadelphia, and the instructive and entertaining address of Joseph F. Leopold, of the United States Chamber of Commerce, Dallas. The afternoon of the final day was devoted to visiting industrial plants in the vicinity of Kansas City, and it was noted that quite a number of the delegates participated in this tour of inspection.

From a standpoint of attendance, interest in the program and enjoyment of the entertainment features, the Kansas City convention of the Natural Gas Department was a genuine success. However, from a standpoint of individual and collective satisfaction over organization matters, it can be said that the meeting proved to be somewhat dissappointing. Those who represented the Southwest, however, claimed that regardless of what action may be taken regarding future meetings of the Natural Gas Department, the Southwest Division intends to continue holding its separate meetings each year as heretofore. Officers were not elected at this meeting for the ensuing year, but a committee composed of A. W. Leonard, Tulsa; Harry J. Hoover, Cincinnati; and J. D. Creveling, New York, will nominate the new officers and present their choice at the October meeting of the American Gas Association, in Atlantic City. It is freely predicted that Henry C. Morris, president of the Dallas Gas Company, and vice chairman of the Natural Gas Department, will be the next chairman, succeeding S. W. Meals of Pittsburgh.

Houston.—The board of directors of the United Gas Company has declared the regular quarterly dividend of $1.75 a share on outstanding Series "A" $7 cumulative preferred stock, payable June 1 to stockholders of record May 15. United Gas Company is under Moody-Seagraves management, and is the holding company for a number of gas companies in Texas and Louisiana, of which Houston Gulf Gas Company, Houston Gas and Fuel Company and Dixie Gulf Gas Company are the best known in Houston.

California's Third Proration Order Completes Program

LOS ANGELES.—Effective at 7 a. m. May 16, Umpire F. C. van Deinse has issued General Order No. 3, which contemplates a curtailment of 190,264 barrels in all California fields. This order is slightly more drastic than previous orders and asks for a greater reduction in the critical areas, as well as in some of the fields that escaped with the minimum cuts of 10 per cent.

In issuing the order Umpire van Deinse stated that there seems to be a feeling in some quarters that those who are fulfilling the general orders in the interest of conservation of California's oil and gas resources, will continue to do so indefinitely regardless of whether others fulfill their share of the undertaking promptly and whole-heartedly. There is no assurance to that effect, however, he continued. He urged the support of all operators.

General order is based on potential production as of May 1. The allowable percentage for each district in the state follows: Coalinga, 89.07; Elk Hills, 90.00; Fruitvale, 90.00; Kern Front, 75.00; Kern River, 90.00; Kettleman Hills, 75.00; Lost Hills-Belridge, 84.63; McKittrick, 90.00; Midway-Sunset, 89.63; Mt. Poso Creek, 100.00; Round Mountain, 90.00; Wheeler Ridge, 90.00; West Coyote, 90.00; Dominguez, 87.30; Elwood-Goleta, 66.76; Fullerton, Brea-Olinda, East Coyote, 90.00; Huntington Beach, 89.62; Inglewood, 90.00; Lawndale, 90.00; Long Beach, 66.24; Los Angeles-Salt Lake, 90.00; Montebello, 88.76; Newport, 90.00; Potrero, 67.00; Richfield, 90.00; Rincon, 73.19; Rosecrans, 90.00; Santa Fe Springs, Meyer zone and above, 90.00, Nordstrum zone and below, 66.83; Santa Maria, 90.00; Seal Beach, Alamitos Heights, 67.51, main field, 67.51; Summerland, 83.85; Torrance, 89.38; Ventura, 90.00; Ventura County-Newhall, 90.00; Watsonville, 90.00, and Whittier, 75.09.

Estimated daily shut in production under General Order No. 2 as of May 27 was approximately as follows: Brea-Olinda, 1200 barrels; Coyote, 1100 barrels; Dominguez, 1000 barrels; Huntington Beach, 3800 barrels; Inglewood, 2500 barrels; Long Beach, 22,500 barrels; Montebello, 1000 barrels; Potrero, 220 barrels; Richfield, 1400 barrels; Seal Beach, 13,000 barrels; Santa Fe Springs, 25,000 barrels; Torrance, 1100 barrels; Ventura, 6000 barrels; Whittier, 400 barrels.

Miscellaneous fields in Northern California probably bring the total to 85,000 barrels.

The bill to prevent gas wastage has passed both branches of the legislature and is expected to become a law at once. An emergency clause has been added and the bill probably will become effective within 10 days after the governor signs it.

Smith Points Out Importance of Public Domain Curtailment

LOS ANGELES.—George Otis Smith, director of the U. S. Geological Survey, has given his interpretation of the purpose of President Hoover's oil land policy, stating that it is primarily to avoid waste, both physical and economic. He stated that a longer life for oil and gas resources and lower costs to the industry, with lower prices to the consumer are the looked for results of the policy. Dr. Smith pointed out that 10 years ago, prior to the enactment of the mineral leasing law of 1920, production and consumption were fairly balanced and that during the few years before almost 25 million barrels of oil had been drawn from storage. He showed that today the picture has changed and that production has more than kept pace with a demand that has more than doubled.

Dr. Smith stated that oil wells on the public domain had contributed only a minor percentage of the 10-year flood of oil, but the government leases have been responsible for fully half of excess oil that has gone into storage during the period.

The crest of a flood wave does the most damage, it was shown, and the best time to stop a flood of oil is before it starts on its way.

The burden of carrying out the administration's oil policy falls on the shoulders of Secretary Wilbur, and he is anxious to start now in California to prevent an economic loss, Dr. Smith said.

Kettlemen Hills is regarded as a menace to the entire industry at this time, he continued, and its potential greatness as a natural reservoir makes the area capable of precipitating an economical disaster. It was clearly shown that Secretary Wilbur appreciates the economic peril which lies in the wake of an extensive development of the field.

Dr. Smith said that as a representative of Secretary Wilbur in California he wished to inform the permittees and others interested in Kettleman Hills that the Department would take any necessary steps to prevent wastage of gas and oil in the field. As a special representative of Secretary Wilbur, he said that he was authorized to discuss preliminary matters looking forward to the extension of permits in the field.

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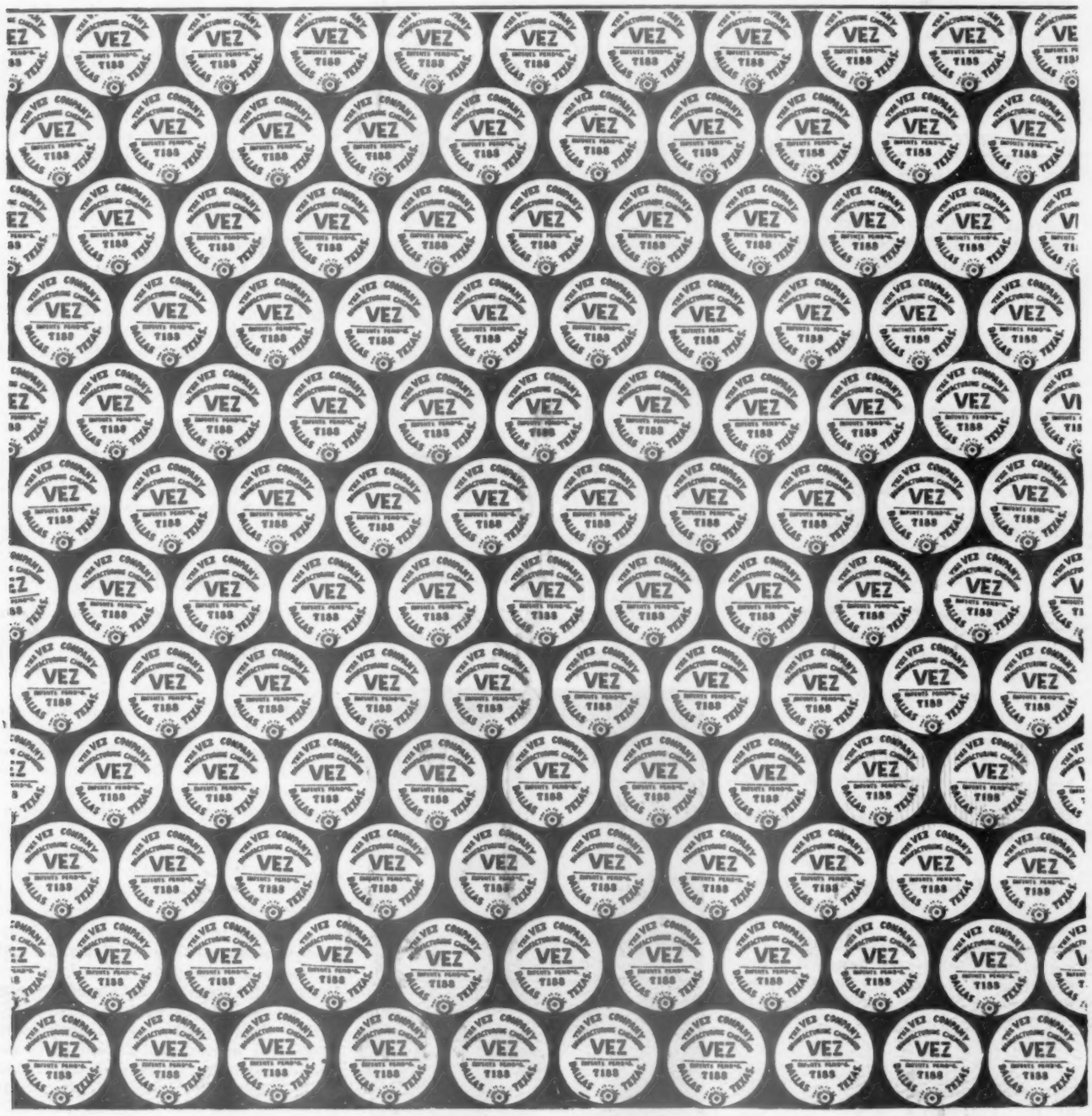

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PERSONAL MENTION-MEN YOU KNOW

Harold N. Pardee, assistant manager of the Fort Worth division of The Texas Company, has been transferred to Tulsa to occupy a similar position with the company in the Oklahoma-Kansas division. Pardee was umpire in charge of proration enforcement in the Winkler County area, West Texas, prior to his connection with The Texas Company last fall. Chas. B. Williams, who has been chief engineer and production superintendent for The Texas Company in the Cisco, Texas, district, will succeed Pardee at Fort Worth.

Frank M. Jacobson, chief clerk in the Fort Worth district offices of the Marland Production Company, was called to Waco, Texas, May 10th by the death of his father in the latter city.

Harold Vance, superintendent of production for the Marland Production Company in the McCamey district, has been transferred to Jal, New Mexico, to assume charge of production held by the company in southeastern New Mexico and the Winkler County section of West Texas. H. B. Hurley, superintendent in the Big Spring district, will take over the management of the McCamey district properties along with his other duties.

Guy Woodward, chief counsel and manager of the Mid-Continent Royalty Owners Association, was in Washington last week, to assist in preparing the case for the oil tariff.

S. G. Gassaway, general sales manager of the Petroleum Rectifying Company of Los Angeles, is on a tour of the Mid-Continent field visiting in Houston, Dallas, Tulsa and other points.

George Otis Smith, director of the United States Geological Survey, has left California, after spending some time in connection with conservation work. Dr. Smith was personal representative of Secretary of the Interior Ray Lyman Wilbur in California.

A party of Standard Oil Company of Indiana officials visited in Casper last week while making an inspection of the company's Rocky Mountain properties. The party was composed of Edward G. Seubert, president of the board; Allan Jackson, vice president; Edward J. Bullock, vice president; Robert E. Humphreys, vice president; Charles J. Barkdull, treasurer; J. W. Curry, director of industrial relations; and C. W. Smith, director of safety. The party went to Denver, accompanied by Casper officials of the Midwest Refining Company.

B. E. Parrish, former vice-president of the Marland Company of Mexico, former president of the Security Plug Company, and former manager of the Consolidated Oil Companies of Mexico, was married in San Antonio, Texas, March the 31, to Miss Minnette McClaugherty. Mr. and Mrs. Parrish are now touring the western coast. On their return to Honey Grove, Texas, Mr. and Mrs. Parrish will leave for a tour of Central America and parts of South America, where Mr. Parrish plans to be associated in a business way with his brother, J. Frank Parrish. Mr. Parrish will be known to many of the oil fraternity as the inventor of the Parrish plug and many other successful patents.

J. H. McEvoy, Sr., Dies

Houston.—J. H. McEvoy, Sr., a leader among the pioneer oil field equipment men in the Gulf Coast, died Saturday, May 11, in Houston following a short attack of double pneumonia. He was buried May 16 in Waterbury, Connecticut, where he was born 68 years ago.

Mr. McEvoy's career in the oil industry is an interesting story. As a master mechanic developed in a wide variety of factories and machine shops throughout the East, in Chicago and North Texas, he entered the oil field equipment business at the bottom; as a driller and producer who invented and made the equipment required to meet his needs in those days when oil field equipment was in reality only a means to an end. He successfully contracted drilling and produced oil at Spindle Top in 1902, going there from Dallas shortly after this country's first salt dome field was discovered, selling his interest in the McEvoy, Dillon & Company, Machinists, to his partner.

J. H. McEVOY, SR.

At Batson, Sour Lake and Humble fields he introduced the system of pumping wells by compressed air when the method was generally considered impractical. He also introduced the gas lift in the Coastal area. At this time Mr. McEvoy built a large air compressor plant at Humble which was destroyed in the spectacular Humble field fire in 1905.

J. H. McEvoy & Company was established in Houston in 1906, the beginning of the present organization, which manufactures and distributes to fields throughout the world a number of products invented by Mr. McEvoy, president and owner of the company.

Mr. McEvoy was married in 1891 to Sacramento Belle Layton of Southern Missouri in New York City. His son, J. H. McEvoy, Jr., a partner in the company for many years and head of the California branch for the past two years, will take charge of the company to carry on the organization his father developed.

Scout Meeting

Fort Worth, Texas. — Arrangements have been made for a record attendance of oil field scouts during the sixth annual meeting of the National Oil Scouts Association of America to be held here May 20 and 21. Convention headquarters will be at the Texas Hotel. Proposed merger of this organization with the Mid-Continent Oil Scouts & Land Men's Association, which recently held its fourth annual gathering at Wichita, Kansas, is expected to be decided here.

The local program and entertainment committees have completed all arrangements for a successful meeting, and printed copies of the nine specially prepared papers to be read during the business sessions will be available for all members, according to John Langston, Dallas, chief scout for the Sun Oil Company and secretary-treasurer of the association. The initial copy of the Swab, which is a monthly publication to be issued regularly in the future, is also ready for distribution. R. T. Lutz, Vernon, scout for the Humble Oil & Refining Company and chairman of the executive committee of the association, is editing the magazine. G. R. Nicholson, Amarillo, scout for the Empire Gas & Fuel Company, is president of the organization, and will preside at the business sessions. Ford Turner, manager of the San Angelo land and scouting department for Pure Oil Company, and R. C. Edwards, Shreveport, scout for Gulf Refining Company, are vice-presidents.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Completions Overcome Curtailment At Santa Fe Springs

LOS ANGELES.—The high initial average and the low gas-oil ratio of O'Connell zone completions, the virtual failure of the Upper Clarke sand as an independent producer, the possibility of the Lower Clarke zone developing into a commercial sand, and efforts to hold field production down through curtailment, shared about equal attention at Santa Fe Springs during the past week.

Average initial production of the five O'Connell zone completions during the week was 4500 barrels. The 22 wells completed in the sand have had a still higher average, with three wells reaching nearly to the 10,000-barrel mark. Actual production of the O'Connell zone producers reached 85,000 barrels, but the weekly average was slightly less.

The gas-oil ratio of the O'Connell zone wells is very low, when compared with that of the Buckbee sand. This is a satisfactory development from several angles and considerably reduces the gas wastage. In some quarters it is contended that this smaller amount of gas will cause a quicker decline, but the opposite opinion seems to prevail. Even though there is only just so much gas, as long as it comes in a low ratio to the quantity of oil, it is remaining in the sand.

The Upper Clarke sand seems about out of the running, so far as producing as a separate sand is concerned. Operators have lost patience because of the high temperatures and the unsatisfactory shale body overlying the sand and are considering deepening many of the outside wells to the Lower Clarke sand. Only one well has been completed in the formation and it was only through a fortunate shutoff that production was obtained.

When produced in connection with the O'Connell zone near the center of the field, the Upper Clarke has been a decided success. The bottom of the O'Connell seems to contain pale oil sand, probably accounting for the high cut in these combination completions, but the high initial yield has more than offset the high water cut. Of the five wells including both the O'Connell and Upper Clarke sands, only one is showing a cut of less than 10 per cent. This means that both zones can not be produced with one string of casing in the greater part of the field.

The Lower Clarke zone is attracting attention in parts of the field outside the O'Connell sand limits and may develop into a fair producer. Its extreme depth is against it, but as its lateral extent is equal to the Meyer zone above, it should yield commercial production in some sectors. This sand has never been tested near the center of the field, but there is evidence to show that it will produce if high temperatures do not prevent shutting off the water.

Curtailment Not to Cut

If all wells were allowed to produce at maximum the O'Connell zone probably would establish a new field peak. The decline of the Buckbee and Nordstrum zones is more orderly than when they were being developed, leaving flush production from the deeper O'Connell sand to have its way in forcing production higher. With 20 wells due for completion during the next three weeks, even curtailment cannot prevent the field from holding its own.

The southwest sector looks better in the Lower Clarke zone than in any sand below the Meyer. For some reason this part of the field virtually failed in the Nordstrum, Buckbee and O'Connell zones. Some production was developed in the Buckbee sand, but water soon took a heavy toll. Leases which were profitably drilled to the Meyer zone got little more than a showing in the deeper sand. The great extent of the Lower Clarke zone gives these leases still another chance.

Oscar Howard's Hathaway 6, in the southwest area, has cored 260 feet of Lower Clarke sand between 7650 feet and 7920 feet and will be tested at once. A string of 6⅝-inch casing has been cemented at 7670 feet. Such a thick body of sand, even at this great depth, stands a chance of commercial production. If this well is successful, many other deepening jobs nearby will ensue.

Structurally, several leases are well located, but an inclination of the Buckbee and O'Connell zones to favor the north and east sectors has caused many failures in the south and west districts.

Associated Oil Company has deepened Clarke 2 to 7972 feet, following an unsuccessful production test in the Lower Clarke zone at 7922 feet. The well is being tested with the same shutoff at 7800 feet, the extra hole having been made as a further test of the thickness of the sand and not as a quest for new formations.

Richfield Oil Company cored more than 300 feet of sand and shale after finding the Lower Clarke zone at 7579 feet in Elliott 2, and will try for a combination formation and cement shutoff at 7610 feet. High temperature prevented a shutoff over the Upper Clarke zone in this well and the same trouble is expected at the present depth. The shale body looks better, however, and it may be possible to set casing satisfactorily in the very small hole.

Associated Oil Company's Green 3, completed three weeks ago at 6915 feet and producing from both the O'Connell and Upper Clarke zones, has proved to be one of the most interesting producers in the field. Ten days ago a one-inch flow bean was substituted for one slightly larger to reduce the flow to comply with provisions of the curtailment program. The well responded to this change by increasing its production from 7200 barrels to 8600 barrels. The reduction in the bean probably struck a better gas-oil ratio. Gas production from this unusual well is less than six million cubic feet, or around 650 cubic feet per barrel of oil. Pressure on the casing increased to 1200 pounds and it was necessary to release considerable gas to hold down the well pressure.

Completions

Universal Consolidated Oil Company maintained its fast pace by completing two good wells in the O'Connell zone. They were Blanchard 8, completed at 5667 feet with an initial production of 6500 barrels, and Blanchard 6, a 3400-

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barrel well at 6527 feet. The former showed a gravity and cut of 31.8 and 12 per cent., respectively, while the latter with a seven per cent. cut and a 33.2 gravity product was considerably cleaner, due to having been completed in the top of the sand.

St. Helens Petroleum Company finally succeeded in getting a good well, after only limited success in the Buckbee zone. The company's Hill 1, deepened to the O'Connell zone and completed at 6350 feet, came in with an initial production of 5600 barrels. This was one of the cleanest wells finished in the O'Connell zone, the cut showing only one-tenth of one per cent. The oil was 35 gravity and the lightest yet found in the O'Connell zone.

The Texas Company's Matern 2-10 was completed with an initial production of 4000 barrels from 6500 feet, but the oil showed a cut of 22 per cent. The Matern lease was good for a time in the Buckbee zone, but water caused trouble after a few months.

Richfield Oil Company succeeded in placing Howard 4 on production at 6500 feet, after plugging back from 6510 feet. The initial flow was 3000 barrels, with the oil showing a cut of 15 per cent.

Although the field average for the week was considerably lower, maximum production for the highest day in the period follows:

Zone	Production	Wells
O'Connell	85,000	22
Buckbee	46,000	64
Nordstrum	30,000	30
Upper Clarke	1,100	1
Shallow	23,000	210
Totals	185,100	327

A summary of operations at the end of the week follows:

Drilling from surface to Meyer zone	42
Drilling between Meyer and 5000 ft.	32
Drilling between 5000 ft. and Buckbee	25
Cemented over Buckbee	13
Drilling in O'Connell	24
Cemented over O'Connell	14
Drilling in Upper Clarke	4
Cemented over Upper Clarke	7
Drilling between Upper Clarke and Lower Clarke	6
Drilling in Lower Clarke	6
Cemented over Lower Clarke	4
Total drilling	177

Fruitvale

Bakersfielf, Calif.—The action of General Petroleum Corporation's Hensley 3, completed two weeks ago in the Fruitvale field with an initial production of 650 barrels, lends an optimistic note to the future of the area and indicates that the field will extend farther to the east than formerly thought. The oil showed a cut of 35 per cent. at first but rapidly cleaned up, with production increasing from 350 barrels to 650 barrels during the process.

Conservation at Kettleman Hills Presents Complex Problem

LOS ANGELES.—The many problems standing in the path of conservation in the Kettleman Hills district have made the situation a very difficult one to handle, and has involved a cross current of opinion which is divided on several questions relating to the possibility of a still further extension after the maximum time limit of nine years on permits have expired.

Normally a government permit in this district expires in two years. The permittee is required to do a certain amount of work, usually including the drilling of a well to at least 1000 feet. If, at the expiration of the two years, the permittee has completed the requirements or has made diligent effort to do so, a three-year extension is given him. If, at the end of the three-year period, he has complied with the requirements, or has continued in good faith to do so, a two-year extension may be granted on the same permit.

After the seven-year period, which includes the original two years, a three-year and a two-year extension, a still further two-year extension may be granted if the permittee is entitled to it. This nine-year period is the limit on permits, according to the Act of 1920.

It is around the question of whether the Secretary of the Interior has the right to extend permits beyond the nine-year limit when the required work has been done that several of the operators at Kettleman Hills are divided. It is readily granted that extension within the maximum time limit may be made, but several permits in the Kettleman Hills district will expire, via the nine-year limit, in a short time, and there is a very vital question of whether these permittees will be recognized after such a nine-year period has expired if they have not complied with the drilling regulations set forth in the permits.

The present Secretary of the Interior is anxious to prevent a flood of crude from the Kettleman Hills field, and has been commended on every hand for his stand, but permittees holding grants which expire soon are reticent to withhold the development work outlined. The secretary may be succeeded by one who will feel that the terms of the permits should have been met, as provided in the Leasing Act, it has been advanced in some quarters.

In reply to a question as to whether the Secretary of the Interior has a right to extend oil prospecting permits under certain conditions, the Attorney General replied:

"Since the extension acts do not require the permittee to do specific acts within specific times, and the admintstrative practice has recognized that the permittee has a discretion not incompatible with diligence as to the apportionment of drilling work within the limit of the extension period, I am of the opinion that the secretary and the permittee may agree, or that the secretary may grant an extension conditioned that drilling operations shall be postponed or suspended dependent on the circumstances of each case, leaving, however, remaining within the extension period adequate time to complete a well to the maximum depth required by the act of February 25, 1920, by the exercise of reasonable diligence. This plan seems not inconsistent with the interpretation and administrative practice of the department which are entitled to respect. It accomplishes the object of the Mineral Leasing Act both as regards the prevention of waste and the completion of a test well within the statutory time, and it secures to the permittee all of the substantial benefits of the Extension Act. I see no objection to it."

It has been granted that the Secretary of the Interior may grant extensions within the statutory limit, but the failure to comply with the provisions of the permits by the end of such period may result in a complex situation.

The Attorney General at Washington has been telegraphed for an opinion regarding extensions beyond the nine-year limit, but has not rendered a decision. His opinion above does not make provisions for such extensions nor does it give the permittee a chance to offer an alibi if he has not done the necessary development work.

Another problem which is causing the smaller operators considerable worry is the danger of the larger companies obtaining the best crews in case of a shutdown. This phase seems negligible at first thought, but few crews are competent to drill between 5000 feet and 7200 feet in the field and still fewer have had the necessary experience. Some of the smaller companies have experienced crews and a complete shutdown on their part might involve the loss of their men to the larger companies.

A committee composed of E. D. Reiter, Ellsworth McGowan, W. H. Berg, W. L. McLain, R. N. Ferguson, J. H. Raney and P. N. Longan is working on a plan which will be acceptable to both the government and operators.

12 New Wells in Three Months at Kettleman

Coalinga, Calif. — Drilling rapidly ahead, operators in the Kettleman Hills field are making much better time than anticipated and probably will complete a dozen wells within three months. Previous experience in drilling to 6000 feet proved a great aid in the present drilling campaign and the few wells which had reached still greater depths are being studied to prevent

costly fishing jobs that were so common during the 10 years of unsuccessful development.

The phenomenal performance of Milham Exploration Company's Elliott 1, the discovery well, has convinced even the most skeptical that Kettleman Hills must be recognized as the only field of its kind in the world. Regardless of whether another good producer is completed, full credit must be given this sensational producer. After more than six months, the well is producing 3400 barrels of 60 gravity oil and 75 million cubic feet of wet gas. The gasoline recovery alone is almost 1000 barrels daily. This brings the daily revenue from the sale of gasoline and oil to at least $8000. The well probably cost $300,000, but in seven months has returned several times as much.

General Petroleum Corporation is meeting new problems in Oschner 2, Section 26-22-18, now drilling at 6975 feet and the deepest well in the field. The well was tested at 6850 feet and responded with a flow of 600 barrels of oil and 20 million cubic feet of gas. It apparently stopped in the top of the sand and was killed to deepen after two weeks. This well was started several years ago, shut down for a year and started again after the discovery of the field.

Milham Exploration Company continues to show the way, with two wells drilling around 6000 feet and a third at 5600 feet. These wells have been pushed down at a remarkably fast rate but are now drilling in the flinty shale which has been the barrier against progress in many wells drilled several years ago.

Standard Oil Company leads the list in the number of operations, with eight drilling wells, two rigs and two locations. The company's No. 81, Section 11-22-17, is drilling in the hard sand at 5935 feet. Two other wells are drilling below 5000 feet, three between 4000 feet and 5000 feet and two between 3000 feet and 4000 feet.

Shell Oil Company is fishing for cones in Armstrong 1, which showed oil and gas between 5200 feet and 5410 feet.

George F. Getty, Inc., is drilling in a hard brown shale at 5425 feet in Armstrong 1, an indirect offset to the discovery well.

Marland Oil Company has reached the hard formation in both of its Elliott wells, one drilling at 5218 feet and the other ready to drill ahead after recovering iron lost in the hole.

A total of 28 wells are now drilling in the field, nearly all of which are below 3000 feet. Companies besides those already mentioned, which are drilling at least one well are Associated Oil Company, two wells; Bolsa Chica Oil Company, one well; Ohio Oil Company, one well; Pacific Western Oil Company, one well; Petroleum Securities Company, two wells.

Ventura

Ventura, Calif.—Associated Oil Company has completed Lloyd 65 in the Ventura field as the best well of the year, the initial production having been 4400 barrels of 30 gravity oil. The well was completed at 7345 feet and production is coming from about 1800 feet of oil sand. Gas production is more than three and one-half million cubic feet. The company's Hartman 9, completed at 7300 feet with an initial production of 900 barrels of oil cutting 50 per cent., could hardly be called a well in its present condition.

M. K. and T. Oil Company's Percy 1, located in the extreme end of the southern extension, has developed a good showing of both gas and oil below 7250 feet and promises to further extend this addition. The company's Foster 2 is drilling at 6650 feet, or about 1000 feet deeper than the level at which production was found in the discovery well.

Ventura Avenue production showed an increase last week, due to new wells, and, to the fact that there are two additional wells on production. A total of 44 wells are actively drilling with 11 producers standing idle and 20 small producers completely shut in. Shell Oil Company's Gosnell 20 has been taken off production and is being drilled deeper. The field's 150 producers are averaging slightly better than 420 barrels to the well.

Lawndale

Los Angeles. — San Clemente Oil Company, discoverer of the Lawndale field, again has shown that it has the formula for completing wells in the area, having placed Peck 2 on production with an initial flow of 1100 barrels. A careful study of the Lawndale map, however, tends to show that the company has the acreage as well as the combination. Peck 2 is located only a stone's throw from the three wells already completed and really proves only a small additional acreage.

Completion of this well at 5915 feet gives the operators to the east little encouragement. Geologists familiar with the field think production will follow along a narrow strip, running northwest and southeast of present producers. The sand seems to feather out along this narrow strip and it is only here that a satisfactory water shut off his been effected. The four wells now producing or that have produced are located in a small circle. All have shown the same characteristics and three of the four have been about the same size.

Along the cluster of derricks east of production, more than half of the wells are idle. This part of the district is showing unmistakable signs of faltering, with some of the more remote operators virtually admitting defeat. A few wells have started since completion of Peck 2, but the significance of the new well has not been a determining factor by any means.

Surface indications are favorable along the strip holding the 50-odd wells, but actual developments point the other way. San Clemente Oil Company and Smith Petroleum Company have thus far got the lion's share of production. These companies are well fortified along a string running both ways from the producing wells.

Sovereign Oil Company's No. 4 has developed into a mystery test at about 7200 feet. A string of casing was cemented below 7000 feet for a test but the result has not been made public.

About 35 wells have been drilled to the level at which production was expected in the townlot sector, but none has been successful.

Potrero

Los Angeles.—Flowing about 200 barrels of 43 gravity oil, Graham and Loftus' Pollard 1, located in the City of Inglewood and about one mile northwest of production in the Potrero field, is making a very creditablue showing on the third production test and probably will be listed as a commercial producer. Tested at 4150 feet, drilled to 4520 feet and plugged back for the present test, the well has been the direct cause of additional drilling within the city.

Los Angeles.—The effect of conservation on wildcatting is a much-discussed question in California, with opinion sharply divided as to the ultimate outcome of the widespread shutdown. There is no apparent reason why curtailment will have a decided effect either way on wildcat operations, but the length of the present shut in and its effectiveness may be the determining factors in the question. The search for new fields will go merrily on, and with the recognized odds against the wildcatter standing at well above 100 to 1, there seems to be no cause for alarm in case of an increase in drilling in unproved areas. The Los Angeles Basin has been drilled with reckless abandon for years, but it is a known fact that oil has been found here; so new fields will be sought as in the past. Wildcatting in the northern part of the state probably will not be affected.

Los Angeles.—California Oil and Gas Permittees and Lessees Association, at a recent meeting here, went on record as supporting only worthy claims and as not favoring privileges for those who have failed to do the necessary work on their permits. The association also welcomed into its ranks many holders of permits living in Los Angeles Basin cities who had not previously been affiliated with the organization.

The election of three vice-presidents for the Southern Division was completed, with Phillip Hansen, K. C. Wallace and F. H. Etheridge placed in these offices. They will act on matters arising in the district.

Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Orlando District Wildcat May Open New Production

TULSA. — Reiter-Foster Petroleum Company's Watkins 1, C SW SE Section 5-19-1w, near Orlando, in Payne County, was the center of much attention in Oklahoma the past week as it penetrated the Simpson or Wilcox sands. If the wildcat is as good as it now looks, the Orlando district will probably get its first real commercial producer. It remains for the well to be drilled in and thoroughly tested first, however, as the territory has had several promising showings previously.

The top of the Viola lime was at 4805 feet, with the six-inch casing set at 4827 feet. It was cemented at 4827-33 feet, with lime at 4833-35 feet. Brown dolomite formation was found at 4835-37 feet. At 4837-40 feet the formation was a lighter grey dolomite. The first show was at 4837 feet, which carried a little gas and oil. At 4840 feet the hole started filling up, and soon made a head. It was closed in, and opened up three hours later for a 10-minute test, during which time it flowed a steady six-inch stream of oil, with the gas flow increasing. The oil is 42 gravity. The pay has not been accurately identified, but is thought to be the Simpson, with some terming it the Wilcox sand.

The well is located on a community block in which Prairie Oil & Gas Company, Twin State Oil Company and Marland Production Company have interest. These companies own a full section covering the south half of Section 5-19-1w, and the north half of Section 8-19-4w.

The well is shut down awaiting tankage to be shipped from Seminole. In all probability it will be carried some deeper.

Test Nears Deep Pay at Oklahoma

Sinclair Oil & Gas Company's Stamper 1, NE SW NW Section 30-11-2w, more than a half mile southwest of the discovery well at Oklahoma City, is nearing the deep pay horizon. Total depth of this test, according to last reports, was 6120 feet, where it was estimated doing 25,000,000 feet of gas. The discovery well had some gas at this depth, although not as much. The gas will be mudded off and the well deepened. The deep pay was encountered at 6402 feet in the discovery well, with the top of the formation at 6355 feet, which does not leave much distance for the Sinclair Oil & Gas Company's test to go.

A short distance behind the Sinclair Oil & Gas Company test is the Mid-Kansas Oil & Gas Company's Fortson 1, C SW NE Section 24-11-3w, one-quarter of a mile north of the producer. These two wells will be the first to test the deep pay since the drilling in of the discovery well last December.

The discovery well since it was drilled in on December 4, 1928, has produced 625,000 barrels of crude oil. It's greatest period of productiveness was during February, when it produced 153,756 barrels. Output of the well is now below 3000 barrels daily again for the second period in its history.

Second Well for Asher Due

Remarkable drilling time has enabled the Prairie-Slick Laster 1, NEc SE NE Section 19-6-4e, south offset to the Simms discovery producer at Asher, to reach the pay horizon. The well is setting casing at 3615 feet in the Viola lime topped at 3605 feet. It has a showing of oil through rotary mud. This test is somewhat higher than the discovery producer on top of the pay.

The producer, in the SEc NE NE Section 19-6-4e, made 3625 barrels the last 24 hours, while on air pressure. The application of the compressed air failed to aid the output materially.

News From Seminole

Independent Oil & Gas Company's Rhodds 1, NWc Section 16-7-4, west of the St. Louis field, is apparently running high. This well has topped the Viola lime at 3925 feet, and at last report was drilling at 3938 feet. It had a small showing in the Hunton lime, but is being carried deeper to the Simpson and Wilcox pays. The former should shortly be found, and will be very interesting to watch as it is but slightly over a mile northwest from the Magnolia Petroleum Company's Latimer 1, a Simpson sand wildcat producer.

Houston Oil Company's Wyatt 1, NEc NW SW Section 17-7-4e, has a hole full of oil and is flowing by heads around 150 barrels. The top of the Viola lime was at 4057 feet, with the total depth now 4097 feet. This well is a south offset to the Magnolia Petroleum Company's Latimer 1.

Indian Territory Illuminating Oil Company's Peterson 1, SE SW NW Section 24-7-5, wildcat between the Little River and St. Louis pools, has a hole full of water at 4436 feet, where it is shut down.

Marten & Irwin, McGraw, Sinclair and Shaffer's Kelly 1, SEc NE NE Section 2-7-4, north extension to the St. Louis field, has been shut in entirely. It will not be opened up for seven days under an agreement reached by operators of the area. It made 1040 barrels on its last 24-hour gauge. It will be held to 100 barrels per day, until the next well reaches the sand. The 100 barrels per day will be flowed all on one day, the remainder of the week it is to be shut in. Independent Oil & Gas Company has already reached 2307 feet with Rutledge 1, an east offset.

Way Named Secretary of Tulsa Exposition

Tulsa.—William B. Way has been selected manager of the International Petroleum Exposition and Congress, according to an announcement by W. G. Skelly, president. Mr. Way, who formerly was secretary of the Natural Gas Association of America, will assume his duties June 1, and remain with the exposition until its affairs are closed, after the affair is closed October 12, 1929.

The exposition will be held here October 5 to 12. The selection of a general manager has been pending since the resignation of J. Burr Gibbons last year. Several men were under consideration. At the last meeting of the board of directors, the executive committee was instructed to select a man for the post.

The affairs of the exposition have been carried on by Victor Shenk, assistant manager. Right now the available space is about three-fourths sold, with requests for space still coming.

While nothing has been done along the line, it seems certain that additional exhibit space will be provided pending the opening of the expostion. Indications are that space requests will far exceed that of last year, when the total income was $101,000. Last year all the space of the present plant was used and a few concerns whose requests arrived late could not be granted.

Oklahoma Allowable Production Raised to 725,000 Barrels

TULSA.—At a mass meeting in Tulsa, May 9, Oklahoma oil operators adopted a resolution to increase the state's allowable production outlet from 650,000 to 725,000 barrels per day. The present shutdown program calling for 650,000 barrels daily will expire on May 15 when the new order will become effective.

The decision to raise the outlet of the state is due to recognition of the seasonal demand. During the past two weeks Oklahoma has been producing around 675,000 barrels per day, and at the same time drawing 50,000 barrels daily from storage to meet demands. This compares with 650,000 barrels daily recovery and 30,000 barrels storage withdrawal 10 days ago.

At the last meeting with the State Corporation Commission at Oklahoma City, failure of the commission to extend the conservation program longer than 15 days showed that they believed that the demand was in excess of 650,000 barrels. The commission can issue order for curtailment only upon excess supply over demand.

Although it is doubtful if the state can produce much more than 725,000 barrels daily at this time, the operators showed themselves still in spirit with the conservation movement by placing a limit of that amount. New fields might possibly build the state's output to that figure. The figure was also made flexible, depending upon the demand, with the commission invited to investigate every 30 days to determine the amount of the demand.

Some companies are taking oil from storage and do not want to continue doing so at the present price. As a result of the local seasonal condition it was necessary to find some way of equalizing the demand and supply.

Collins' Petition Read

The purpose of the meeting was to consider the petition of Ray M. Collins, state umpire, which called for the continuance of the 650,000 barrels per day limit in Oklahoma, and was to include all pools in the state averaging more than 100 barrels per day per well. This would have included the Allen, Lovell and Oklahoma City areas outside of Greater Seminole. It also carried a paragraph limiting all new wildcat producers to 100 barrels daily for 30 days after completion, with no other tests to start drilling without special permission.

After some discussion on this question and moving that it be adopted, it was called to vote with the result that 16 showed themselves to be in favor of the petition, with three against, and four passing. The three voting against the plan were Prairie Oil & Gas Company, Producers & Refiners Corporation and Sinclair Crude Oil Purchasing Company.

Tulsa.—The Oklahoma State Corporation Commission has ratified the petition of Oklahoma operators increasing the allowable outlet production of Oklahoma from 650,000 to 725,000 barrels. The new order is effective May 15.

Prairie Viewpoint Given

W. S. Fitzpatrick, chairman of the board of the Prairie Oil & Gas Company, explained why he voted no for his company.

He stated, "Prairie Oil & Gas Company is drawing 40,000 barrels per day from storage and none of the gentlemen favoring the idea of us continuing this for the next 60 days will slow up their refineries and sell us any oil.

"Prairie Oil & Gas Company has been for all curtailment programs, giving its men a Sunday off, and otherwise helping to absorb the over-supply of crude for the past five years, and when we need oil we have a time getting it. We are tired of carrying this burden. We carried the burden of 1927, storing 11,000,000 barrels, which has not been depleted. Oklahoma produced in 1928, 6,000,000 barrels less than the amount demanded.

"You have no more right to say to us that we should not produce enough crude to supply the refineries to which we are connected than trying to tell a Chinaman that he should not grow so much rice because there is an overproduction of wheat in South Dakota. I say that the overproduction situation is one of pools, not of the nation. There is no overproduction in Oklahoma and Kansas.

"I do not think there is a State Corporation Commission that would issue such an illegal order as to hold production below the consuming point.

"It has been said here that the Oklahoma market is not an economic market, but that was not said by a man wanting to buy crude. The demand for crude today is growing so steadily that we are losing customers day by day from buyers who are offering premiums. There was a 14 per cent. increase in gasoline consumption last year. At the same time Illinois, Indiana, Ohio, Kentucky and the Appalachian districts were experiencing lower outputs, thereby placing a greater burden on the Mid-Continent for light oils.

"The northern refining men are demanding crude in bigger quantities than they can get. They should know their business. It is nonsense to curtail when there is someone clamoring for oil. It is a false impression that Oklahoma is producing more crude than the demand. This belief is depressing to the market.

"We curtailed during 1927 and 1928, whereas if we had gone ahead as they did in Texas and California we would be in a position to flood somebody. It is a peculiar circumstance but everyone desiring curtailment in Oklahoma has production in California and Texas.

"Big concerns have been drawing from storage for two months. Prairie Oil & Gas Company has been drawing for the past four months. Prairie Oil & Gas Company is not interested in all phases of the business. It produces and sells like the rest. If there is a profit in the refinery market we do not get any of it.

"When unable to produce, as we have been unable, enough oil to supply our trade we have bought it from other producers. Prairie Oil & Gas Company will cooperate whenever there is overproduction.

"We emptied tanks in 1928 and 1929 that will help in time of surplus and you have no right to ask us to stand back when we have a chance to sell. I insist it is right to produce as much oil as the markets need. We will produce and buy only the oil the Prairie Oil & Gas Company needs and will not produce an overproduction to flood the markets.

"Prairie Oil & Gas Company would be glad at this time to buy from 25,000 to 40,000 barrels a day from anyone desiring to sell crude production."

Adopt Davis Proposal

The refusal of the Prairie Oil & Gas Company and Sinclair Oil & Gas Company to accept the petition of Collins for a state-wide proration program, and the meeting desiring to go on record as still favoring proration, resulted in the operators adopting a letter previously read by W. N. Davis, vice-president Phillips Petroleum Company, and president of the Mid-Continent Oil & Gas Association. This showed the concensus of opinion of those present being to hold production to demand, but not below that figure. The Davis letter calls for a flexible outlet to be determined by the demand from the pipe line companies. In other words, under this plan the state's production would be high during the summer and then lowered during the winter. It was agreed that the figure should be placed at 725,000 barrels until July 1.

T. B. Slick when called on for his vote caused an outbreak of laughter and hand clapping when he said: "While I haven't much production since selling to the Prairie Oil & Gas Company, I still maintain that if I should get any big production again that I will produce it as I see fit and no state corporation commission will tell me how to run my business."

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North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Shipley Pool Gets Pipe Line Outlet; Crude Is High Quality

SAN ANGELO.—A pipe line connection and market outlet that will afford a premium above regular West Texas crude prices became assured for the Shipley pool, located in southwestern Ward County, late last week as result of producers contracting to deliver oil for one year. Officials of the Blue Bonnet Oil Refining Company and Wickett Refining Company, affiliated concerns with refineries at Wickett, Texas, contracted to build the line, which will consist of about 16 miles of four-inch pipe, and begin crude shipments to the latter plants late next month.

Shipley pool is the only oil area in West Texas without a market outlet, and is averaging about 500 barrels of 35 to 36 gravity oil daily from four wells.

The producers are to be paid on a basis of about 40 cents per barrel under the Mid-Continent price posting of the Prairie Oil & Gas Company for similar gravity oil, thus giving Shipley pool producers a bonus of 10 to 15 cents per barrel as compared to regular West Texas postings.

A new concern is to be organized to build and operate the line, and the following will be the principal stockholders, C. R. Armstrong of Lock Haven, Pennsylvania; B. L. Wooley of Dallas and W. B. Hassett of Tulsa.

Pumping tests given the World Oil Company's wildcat oil producer on the McDowell ranch, Glasscock County, credits it with an initial output of 250 barrels of 27 gravity oil from lime formation at 2351-98 feet. Humble Pipe Line Company is expected to complete its extension line to serve this well later in the week.

Shipley Pool Widened

The productive limits of the Shipley pool were widened nearly one-half mile to the southeast during the past week by the J-H-L Oil Company's (L. C. Harrison) S. F. Hayzlett 2, which flowed about 115 barrels daily last week from top of sandy-lime pay at 2430 feet. The drilling in of this test has been halted pending the erection of tankage. It is located in the east corner of 80-acre lease in Section 17, Block 5, H. & T. C. Survey, and on the opposite corner of the tract from the same company's Hayzlett 1, which has been swabbing about 50 barrels of oil daily at 2455-2513 feet. A substantial gain in production resulted from 115-quart shot at 2465-2506 feet in Shipley Oil Corporation's discovery well on the Hayzlett 80-acre lease, and during the first 24 hours after shot the well is credited with having flowed about 180 barrels of 34 gravity oil. This well opened the pool last November at 2450-81 feet with an initial flow of 120 barrels, but quit flowing when a direct offset held by Atlantic Oil Producing Company and Delmar Oil Company was shot last month. The latter interests' Hayzlett 1 is flowing about 200 barrels daily at 2473-2506 feet. The four producers in the Shipley pool are all located in Section 17.

The Pecos Valley pool, located about 12 miles to the south of the Shipley pool and across the Pecos River in northern Pecos County, added one new producer within the past week, and also a failure on a nearby semi-wildcat location. M. H. Black and associates' Pecos 1, located on 10-acre lease about 1500 feet southeast of the Pecos Valley Oil Company's discovery well, logged regular pay at 1618-48 feet, with a surface elevation of 2453 feet, and began slopping over casing shortly after drilled in. The Weekly Oil Corporation and associates' L. L. Byrne 1, located in western part of Section 24 and more than a mile south of the above producers, encountered hole full of sulphur water at 1556-70 feet, and has since been abandoned at 1600 feet, with a surface elevation of 2479 feet.

M. J. Bashara et al's wildcat gasser on Bashara fee land, Winkler County, has been shut in after extinguishing flames with nitro shot on the third day after catching fire. This wildcat probably opens a new gas field to the north of Kermit, and gauged 19,400,000 cubic feet of dry gas at 2481 feet when placed under control. The derrick is being replaced, with plans to deepen the hole for oil. W. A. Moncrief and W. W. Donnelly's wildcat test on the R. Massie ranch, Crockett County, caught fire and damaged rig May 11 while making gas from pay at 1151-98 feet, and sulphur water at 1220-40 feet. The same parties' Todd 1, which recently gave promise of making a small oil producer, has been ordered plugged and abandoned after small shot at 1363-78 feet, with at total depth of 1400 feet, where sulphur water was encountered.

Big Lake Oil Company is preparing to run a string of 6⅝-inch casing at 6251 feet in University 131, Big Lake field, to try for production in the 6300-foot pay horizon, which showed for a small high gravity oil producer in the Group One Oil Corporation's (Texon Oil & Land Company) deep well. The former test was deepened from the 2909-foot producing horizon last January, and has made good speed to date. Group One Oil Company's deep test jumped to a new peak level on oil and gas production early this week, having produced 2542 barrels of oil and 23,799,000 cubic feet of wet gas at 8523 feet, with 190 pounds of back pressure.

Yates Field Production Increased May 10

San Angelo, Texas.—The advance of production in the Yates field to 100,000 barrels daily went into effect May 10 in accordance with the terms of revised proration orders issued by the Texas Railroad Commission. Allowable production of this field was boosted 12,500 barrels daily, but 4624 barrels daily of the above amount is to be diverted to field storage by Simms Petroleum Company until three 55,000-barrel steel tanks can be filled. The balance of the increased output is to be shared about equally by the Humble Pipe Line Company and the Illinois Pipe Line Company, and the latter is negotiating for the sale of a large amount of Yates crude daily for tank car shipment from its Del Rio rack to dispose of surplus oil now being handled in excess of existing contracts held with Humble Oil & Refining Company and Del Rio Refining Company.

Gulf Production Company diverted all of its own production in the Yates field for its own use beginning May 10, having heretofore sold to other purchasers all oil produced in excess of the 9500 barrels daily that was being handled by Gulf Pipe Line Company. The latter concern has completed the looping of its eight-inch trunk line, which extends from the Yates field via McCamey and McElroy fields to Midland, where connection is made with 10-inch to the Coast. Gulf Production Company has a daily allowance of 13,316 barrels in the Yates field during the ensuing period, which extends until June 1, when revised production quotas

will be determined by Umpire Ray Richmond based on potential production and producing acreage. Gulf Production Company is the second largest producer in the field, with Mid-Kansas Oil & Gas Company and Transcontinental Oil Company, joint owners, having a daily allowance of 47,157 barrels, while The California Company ranks third with an allowance of 13,126 barrels daily.

Estimated potential production of the Yates field was placed at 4,948,784 barrels daily on May 10 by Umpire Richmond from 305 producers, and only 41 wells in the field are showing water.

Texas Company Filling West Texas Line

San Angelo, Texas.—The Texas Pipe Line Company has started filling its West Texas trunk line system, which extends from Jal, New Mexico, via fields in Winkler, Crane, Upton and Pecos Counties, to Houston and Port Arthur, with crude as far south as Ozona station, Crockett County. Only a small gap remains to be tied in on the trunk line between Ozona and Fredericksburg before the entire line can be filled with oil, and plans are to have most of the main line stations in service about June 1. This trunk line consists of 10-inch pipe from Jal to Crane station, Crane County, and 12-inch from the latter point via the Yates field to the Coast.

White Eagle Pays Premium For Crude

Wichita Falls, Texas.—White Eagle Oil & Refining Company has contracted for the purchase of 2500 barrels of Wilbarger County crude daily at 10 cents per barrel premium from the W. T. Waggoner Estate, which controls the market rights to the bulk of the oil being produced on its ranch properties, centering on Wilbarger and Wichita Counties. This oil is to be used in the purchaser's refinery at Fort Worth, and will be delivered by The Texas Pipe Line Company, which has a posted tariff of 25 cents per barrel, plus 7½ cents gathering charge, on such movement. This oil ranges from 37 and 39° gravity at the wells, and about 2000 barrels of the amount involved in the above deal has heretofore been run for purchase by a major pipe line company. White Eagle Oil & Refining Company is now in the midst of an expansion program on bulk and service stations in and near Fort Worth.

Moss Bluff Test in Salt

Houston.—Humble Oil & Refining Company has abandoned Sterling 4 at Moss Bulff, Liberty County, in salt at 3619 feet. The Moss Bluff dome was discovered by geophysical work, but has not yet proved productive.

Another Shallow Pool in Coleman County

Coleman, Texas.—Another shallow gas pool was added to Coleman County during the past week when the wildcat test of Humphreys Brothers, Inc., and the Union Oil Company of Nevada on the Sanger Brothers land gauged 11 million cubic feet daily from sand at 1175-83 feet. This wildcat is located about one and one-half miles southeast of Santa Anna, and in Section 61, H. & T. C. Survey.

In the Caddo field, Stephens County, T. G. Shaw, Fort Worth operator, and associates' F. A. Manning 1 flowed 50 barrels per hour for five hours from lime at 3288-99 feet, and bridged. This well is one of the largest contributed by the county in months, and is located near old producers in the northwest part of Section 42, Block 4, T. & P. Railway Survey, or about one mile southeast of the town of Caddo.

Big Flow of Oil and Gas In Gray County Well

Amarillo, Texas.—Operators Oil Company of Tulsa scored its second big producer for the year in the Gray County section of the Texas Panhandle district when its S. Faulkner 1, located about two and one-half miles northwest of Lefors, blew in last week making more than 60 million cubic feet of gas and 3850 barrels of 40.6 degree gravity oil on first full gauge from regular sand at 2787-90 feet. This company developed an initial flow of 7500 barrels of 42 degree gravity oil from its W. Jackson 3, located in the Bowers pool, late in March, at 2840-65 feet. The Faulkner well was flowing about 3600 barrels daily late last week. It is located in the southwest corner of the west 60-acre lease in Section 30, Block B-2, and a northeast offset to Marland Production Company's Finley-Brown 1, which opened this area in March, flowing 1450 barrels daily at 2843-46 feet. Phillips Petroleum Company's J. H. Palmer 1, a north offset to Marland's producer, was in process of completion late last week at 2806 feet, making between 40 and 50 million cubic feet of gas and spraying about 300 barrels of oil daily.

Wilbarger County Leases Change Hands

Wichita Falls, Texas.—The Fain-McGaha Oil Corporation has purchased the W. T. Waggoner Estate's interest in eight separate leases, having a combined output of 3800 barrels daily, in Wilbarger County, for a cash consideration of $1,800,000. These leases involve a total of 780 acres, with 48 producing wells,, and all are located on the Waggoner ranch, centering around the Greyback and Rock Crossing pools. Approximately 1,500,000 barrels of crude had been produced from the properties up to the closing of the above deal, effective May 1, and the Fain-McGaha Oil Corporation operated the lease on a 50-50 basis, with the Waggoner Estate's share of the development expense being taken care of from oil and gas produced. The Waggoner Estate retains its usual one-eighth royalty interests, and also the right to run that portion of the total production needed for its refinery, located near Electra, but Humble Pipe Line Company is running the bulk of the oil for purchase, while Sinclair Pipe Line Company is also running oil from several leases.

Headquarters of the Fain-McGaha Oil Corporation are located in the Hamilton Building, Wichita Falls. E. R. Fain is president, and Charles P. McGaha is vice-president, while Ralph Roderick is superintendent of production.

Wichita County Gets New Pool

Wichita Falls, Texas.—The Sunshine Hill district in northern Wichita County added a new pool during the past week when the wildcat test of J. H. Howell and associates on the Foster-Allen land, swabbed at the rate of 150 barrels daily from sand at 1787-92 feet. This well is located in the northwest part of Section 1, H. T. & B. Railway Survey, abstract 129, and about 2½ miles northeast of Sunshine Hill.

Two shallow gassers were added to the Denison pool, located in northern Grayson County and near Red River, during the past week, including Simpson-Fell Oil Company's H. Gulloud 1, gauged 11,200,000 cubic feet at 887-900 feet, with a rock pressure of 305 pounds. This gasser is located in the northeast corner of a 160-acre lease in the James Ingram Survey, A-617. The Texas State Oil Company's (was Murchison Oil Company), G. W. Wall 1, located northeast of the above gasser, has been completed with an initial output of 5,500,000 cubic feet at 880-892 feet. This gas area was uncovered in October, 1927, when the Simpson-Fell Oil Company's G. W. Wall 1, plugged back from 2001 feet to 849 feet and tested about five million cubic feet daily, with some water. The company's second test failed to produce after drilling to 1385 feet, and the third made 4¼ million feet daily at 870-881 feet. Lone Star Gas Company has been purchasing a portion of the available gas supply since August, 1928, paying 10 cents per thousand, and is negotiating for connections with the two new producers.

Tulsa.—Shell Petroleum Corporation's Wiley 1, NWc NE Section 25-16-19e, four miles north and one mile east of Fort Gibson, in Cherokee County, Oklahoma, has cemented eight-inch casing on top of a sand at 340 feet and is drilling ahead.

Los Angeles.—An official German commission, appointed to make an exhaustive study of the gasoline tax in representative states in the United States, will visit Los Angeles some time in May. This commission hopes to gather information on which to base regulations in Germany.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Second Well Completed At Black Bayou

Houston.—Shell Petroleum Corporation's Watkins 6, at Black Bayou, a geophysically discovered salt dome in Cameron Parish, Louisiana, came in May 8, flowing 1600 barrels fluid, including 75 per cent. b. s. and water and 25 per cent. 28 gravity oil through a half-inch choke. Early this week the well was reported flowing 30 barrels per hour, or at the rate of 720 barrels daily, 25 per cent. oil, on a three-eighths inch choke. Depth of the hole is 4727 feet, with 6⅝ inch casing set at 4702 feet; the production is from sandy shale.

This is the second oil producer for the Black Bayou dome. The first was Shell Petroleum Corporation's Watkins 9, which came in the latter part of April swabbing around 30 barrels of heavy oil, 19.6 corrected gravity, from the cap rock at 981 feet. That well is now being rigged up to pump, and will probably produce from 25 to 50 barrels daily.

Shell Petroleum Corporation's latest well at Black Bayou is the ninth completed test in that area; all having been on the estate of Mrs. J. B. Watkins, in Sections 7, 8, and 18-12s-12w. The first test was started there about the middle of March, 1928, following discovery by seismograph; and that first test proved the presence of a salt dome, encountering cap rock around 1200 feet, and being abandoned in salt at 1700 feet.

Goose Creek Wildcat Test Reported Spraying

Houston.—Humble Oil & Refining Company's Simms-Smith 75, a wildcat test located one and one-half miles east of production at Goose Creek was reported in Houston on Tuesday of this week to have come in as a gas well, spraying some oil, from a total depth of 4418 feet. Completion of the well could not be verified at that time at Humble Oil & Refining Company.

Location of Simms-Smith 75 is 2150 feet from the south line and 1300 feet from the east line of the William Scott survey. It is 4200 feet south (and a little west) of Humble Oil & Refining Company's Simms-Smith 74, which at 6967 feet was the deepest hole ever drilled in the Gulf Coast. It was abandoned in sticky shale early in February, 1929. Simms-Smith 74, in turn, was 2200 feet east and 950 feet north of Humble Oil & Refining Company's Simms-Smith 73, which was located over one mile northeast of the old field and 1600 feet from the nearest production. Simms-Smith 73 came in on May 15, 1928, at 6159 feet, making a large amount of gas together with approximately 700 barrels of oil daily, but soon quit flowing and was finally abandoned at 6245 feet.

Humble-Valley Get Three Producers

Houston.—Humble Oil & Refining Company and Valley Oil Corporation completed three wells during the past week in Raccoon Bend field, Austin County. Their Kalieszewski B-1 in the extreme east side of the field was completed for 1,500,000 cubic feet of gas. Sanders 2, in the east central part of the field, east of the Urban tract, came in for 500 barrels of oil at 3230 feet; and Roy Thompson 3 in the north end of the field came in for 300 barrels at 3325 feet. Roy Thompson 3 is an east extension well, being 1000 feet east of the nearest producer, the above partnership's Sherrill 1, and 1900 feet southeast of the Beal 1. Average daily production at Raccoon Bend during the week ending May 11 was 4100 barrels.

Salt Flat Establishes High Output Mark

Houston.—A new high mark in weekly production was established by the Salt Flat field during the week ending May 11, the average yield was 43,300 barrels daily. During the previous week the production was 40,000 barrels daily.

Among the wells completed during the week was Humble Oil & Refining Company's Trap Briscoe 1, which extended the field 300 feet north. It came in at 2762 feet, estimated making 700 barrels per day. Before it was completed, the most northerly producer in the field was Shell Petroleum Corporation's New 4, which had been completed about a week earlier as a 100-barrel well at 2754 feet. With the Humble Oil & Refining Company's Trap Briscoe 1 as the most northerly producer of the area, Salt Flat is now 6¼ miles long.

Besides Trap Briscoe 1, the Humble Oil & Refining Company completed two other producers during the week: Tiller 1 for 1550 barrels at 2661 feet, and Moses-Baggett A-8 for 125 barrels at 2676 feet. The Texas Company completed Merriweather 7 for 175 barrels at 2756 feet. Gulf Production Company finished R. W. Carter 11 for 225 barrels at 2674 feet.

Liberty Well Abandoned

Houston.—Union Exploration Company has abandoned Esperson 2, a wildcat located six miles west of South Liberty, at 6014 feet in sticky shale. That test had had a slight oil showing at 3200 feet, an oil show at 3441-64 feet, and also gave promise of production at 5567 feet and at 5797 feet. At the latter depth, after screen was set, it began blowing gas and a little oil, but soon afterward quit flowing, and after being worked over tested salt water.

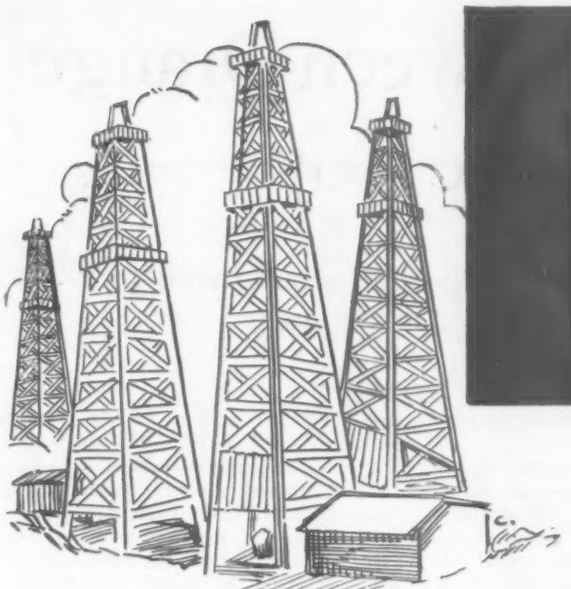
Five Wells Abandoned in Ottine Area

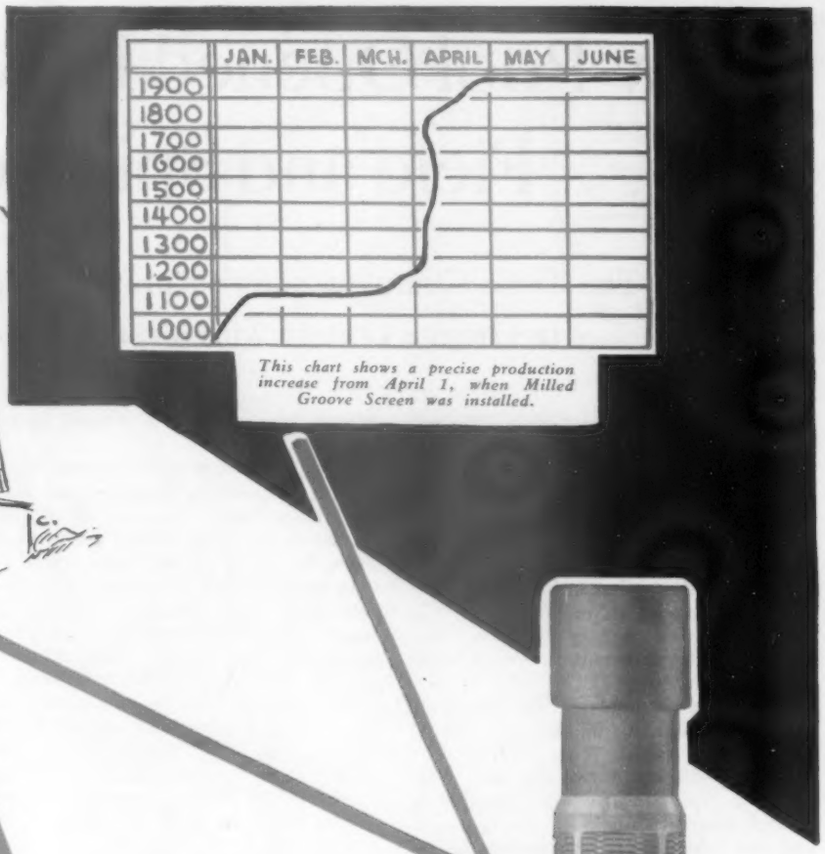
Houston.—Two more tests were abandoned during the past week in the Ottine area, northern Gonzales County, making a total of five dry holes and no producers that have been finished following the completion of the discovery well of the area, Empire Gas & Fuel Company's Norwood 1, which came in shortly before Christmas, 1928, as a flowing well, and was later made a fair pumper.

One of the two tests abandoned the past week was Empire Gas & Fuel Company's Norwood 2, an offset to the discovery well. It was finished at 4226 feet in limestone that was dry. The test hit the top of the Austin chalk at 3695 feet, which is relatively high for the area. The other test abandoned during the week was Benedum & Trees' J. L. Lamkin 1, which was abandoned at 4367 feet, also in the lime. It had topped the Austin chalk at 3990 feet.

Production from the discovery well, Norwood 1, tested 32 gravity and was said to be from base of the Taylor marl and possibly partly from the Austin chalk. The bottom of the hole is at 3779 feet. Coming in shortly after the first Edwards lime production was obtained at Salt Flat, Caldwell County, about 10 miles to the north, the Gonzales County area was credited with good possibilities in the belief that it might develop into another important Balcones fault zone field, such as Salt Flat or Luling.

Besides the failures of the past week, the three dry holes drilled in the Ottine area after completion of the discovery well included Cranfill & Reynolds' Webb 1, located 480 feet south of the discovery well, abandoned at 4281 feet in Edwards lime after topping the Austin chalk at 3802 feet; Empire Gas & Fuel Company's State 1, which topped the Austin chalk at 3600 feet, and the Edwards lime at 4057 feet, in which it was abandoned at 4077 feet after having a show of sulphur water; and Indiana Petroleum Corporation's L. F. Karnstadt 1, one-quarter mile southwest of the discovery well, abandoned in lime at 4344 feet, after topping the Austin chalk at 3884 feet.





This chart shows a precise production increase from April 1, when Milled Groove Screen was installed.

"**. . . Jim, that Layne Milled Groove Screen was installed April 1, and, boy, our production shot upwards more than 33-1/3%!"**

"We've been using old type screen at our field, Jerry, and our production ain't nothing to brag about."

"This Milled Groove screen beats anything I ever heard tell of—it meets every screening condition, and the possibility of it becoming clogged with mud or sand is eliminated by the short drainage distance between the Keystone Wires, with which every Layne Screen is wrapped."

"I reckon, then, we better install Milled Groove."

"You bet, Jim, and you better do it now instead o' later."

The Layne & Bowler Co.

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Increases Production

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Los Angeles, Calif.

Vickers, Limited
London, England

LEADERSHIP IN SCREEN MANUFACTURE FOR A QUARTER CENTURY

New Pool Opened Between Orange Field and Spindle Top

The Texas Company controls most of large area around well in Orange County which came in for 1900 barrels

HOUSTON. — In Orange County, three miles north of Port Neches, in the midst of a wide expanse of marsh land, where the grass grows tall and profusely and the wild canes tower above a man's head, and where a surveyor must jump from one matting of dead and fallen grass to another lest he sink in the mire to his knees, in such a setting The Texas Company on May 9 opened what promises to be an important Gulf Coastal field by completing H. J. Kuhn et al 1 for initial production of 1900 barrels of 21.4 gravity pipe line oil through a three-quarters-inch choke. The production is from the Miocene formation at a total depth of 3160 feet, the hole having been carried down 18 feet into the oil sand, and one joint of 4¼-inch screen having been set. Six and five-eighths-inch casing is set and cemented at 3119 feet. Early this week the well was still on a three-quarter-inch choke, and was flowing at the rate of 1650 barrels daily.

Completion of this producer is another phenomenal triumph for the science of geophysics, the well being the first test that has been drilled in the area, following its discovery as a favorable prospect by seismograph. Heretofore the only important Gulf Coast field that has been opened with the first test following geophysical work was Sugarland, Fort Bend County.

Non-Salt Dome

Whereas Sugarland was discovered by torsion balance, however, the new field in Orange County was found by seismograph. And while it is known that Sugarland is a salt dome field, the cap rock having been drilled into there, it is generally believed that the new Orange County area is of the non-salt dome type of coastal field, like the old Orange field, Goose Creek, Lockport, Sweet Lake and a few others.

It is said that through the seismograph work indication was given of the existence of an abnormal condition; but that no salt dome was indicated. On ordinary salt domes certain definite results are obtained with the seismograph. Those results, it is reported, were not found in the work in the area of the new Texas Company well.

In fact the area is reported to have been worked by geophysical crews for several major companies before The Texas Company became interested in it, and none of those concerns attached enough importance to it to work up lease blocks.

The Texas Company, however, considered it a favorable prospect, and leased up a large block. The task of obtaining the leases was less difficult than in some cases, by virtue of the large tracts held by a small number of owners. The Texas Company's total holdings exceed 6000 acres, with the producing well near the center of that block. That company's acreage includes all within a wide radius of the producer with the exception of two tracts. Gulf Production Company has the lease on the M. H. Stark 327-acre tract, which at the nearest point is 2500 feet north of The Texas Company's Kuhn 1. To the south the Shell Petroleum Corporation holds the lease on the J. T. Adams tract of 150 acres, which is 3000 feet from the producer.

Port Neches Field

Due to the fact that it is only about three miles from Port Neches, the newly opened Orange County area has been designated heretofore by The Texas Company as the Port Neches prospect; and if a field is developed it will most likely be called the Port Neches field. Port Neches is a town on the Neches River, where The Texas Company has a large asphalt plant.

The new well of The Texas Company is approximately mid-way between two prolific Gulf Coast fields, Spindle Top and Orange, being almost on a direct line between them. It is about 6½ miles east of Spindle Top, and five miles west of the Orange field. Spindle Top, famous as the first of the American salt dome fields, has been the most prolific of all the Coastal pools, having to its credit a total recovery exceeding 100 million barrels. Orange was discovered in 1913, and up to now has produced over 28 million barrels of crude, although present production is down to about 3000 barrels daily. Although various deep tests have been drilled at Orange, no salt core has been reached; and it is possible that the new Port Neches area will resemble Orange in that respect.

Showing location of The Texas Company's Orange County Producer

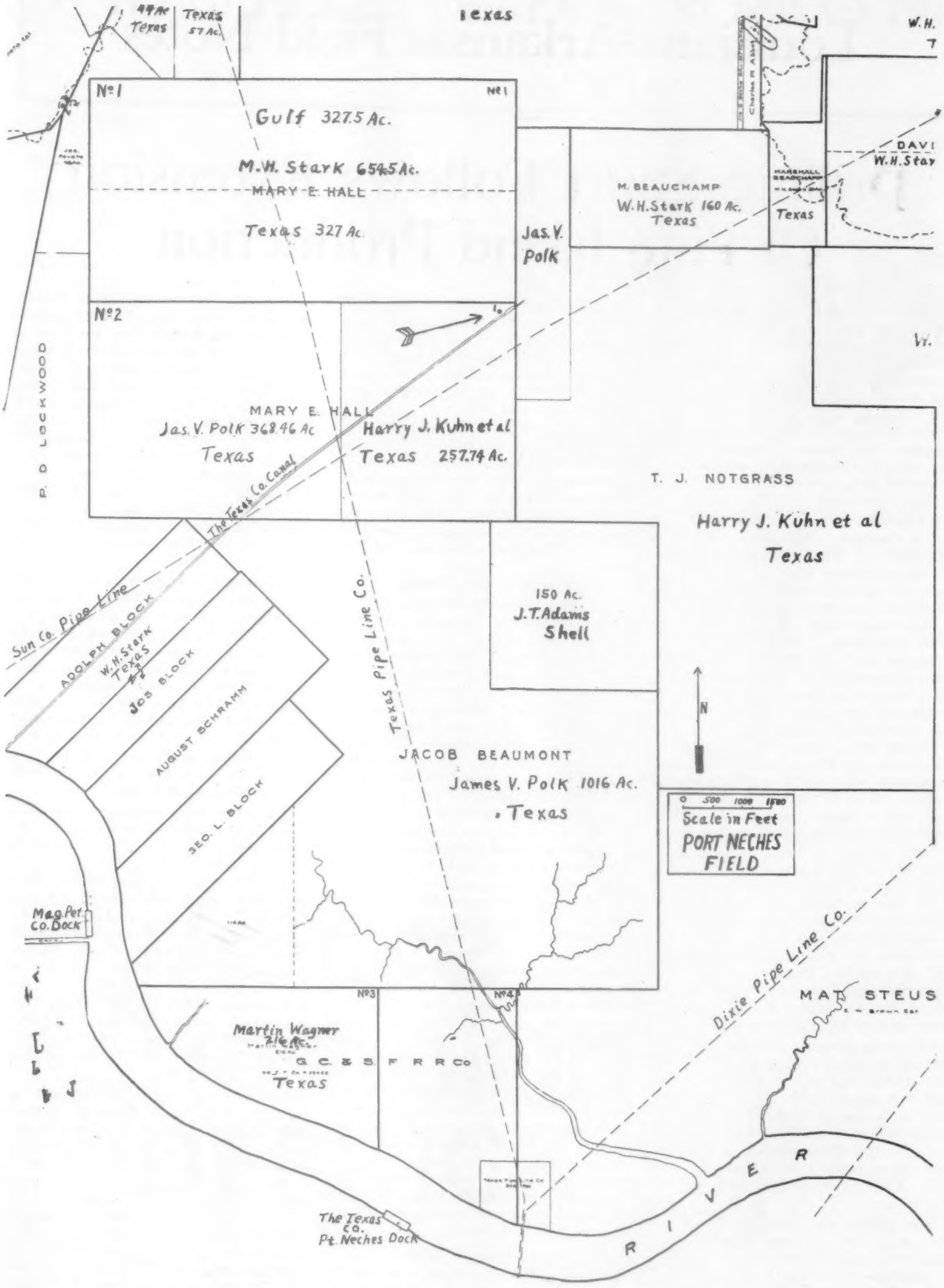
Transportation Facilities

Although the wildcat producer of The Texas Company is in a marsh, the transportation problem for the area is lessened through the proximity of the Neches River, which flows within two miles of the producer. The Neches River is navigable to the largest ocean-going boats. From that stream The Texas Company dredged out a canal leading to the location of Kuhn 1, and moved materials in by boat through the canal. Future drilling materials will be handled in the same way. To each new location a branch canal will be dredged from the main canal. Dredging is relatively easy. An engineer working in the area took a 20-foot cane and readily sunk it its entire length in the marsh.

Foundations for derricks and boilers and flow tanks are made by criss-crossing timbers to form mats which are allowed to settle down in the marsh. A wooden derrick was used in drilling Kuhn 1. The production was at first being run into two 1000-barrel steel tanks; but is now being run through the fuel line which supplied the oil for drilling the wildcat. That fuel line connects with The Texas Pipe Line Company's eight-inch line from Vinton, Louisiana, to Port Neches at a point only 3000 feet from the wildcat producer. Production from Kuhn 1 is run into that line and on to Port Neches and to The Texas Company's refinery at Port Arthur. Although the new well is only 3000 feet from the line of The Texas Pipe Line Company, a subsidiary of The Texas Company, it is even nearer to a pipe line of the Sun Oil Company. There is also a natural gas trunk line running within a short distance of the well.

No new locations have been announced for the area.

Late reports on The Texas Company's Kuhn 1 showed that it produced 1654 barrels pipe line oil on May 13, and on May 14, the sixth day after completion, it flowed 1528 barrels, still on a three-quarter-inch choke.



Ownership map of new strike made by The Texas Company in Orange County

Louisiana-Arkansas Field Notes

Drilling Spurt Follows Extension Of Pine Island Production

SHREVEPORT.—A spurt of drilling activity following on the heels of the extension of the Pine Island producing area in the Woodbine horizon three miles southeast to within nine miles of Shreveport, with seven new locations made offsetting the extension well, and a drill stem test that indicates the extension of the southeast edge of Champagnolle a half mile south and east, were the features in this territory last week.

While the territory opened by D. C. R. Oil Company's Hunter Estate 1 in NW NW of Section 17-19-14, Caddo Parish, completed as a 130-barrel producer, is regarded as extremely treacherous, the companies owning adjoining acreage have been quick in planning offset operations. The D. C. R. Oil Company has sold the well and 1100 acres surrounding it to the Standard Oil Company of Louisiana, which has announced four offsets. One is 900 feet northwest in Section 7-19-14. Rig is already being moved in for the test. This is W. K. Henderson 1, formerly announced as Carter 1. To the west in Section 18-19-14 location has been made by the same company for P. W. Oden 1 in NE NE of the section. Gulf Refining Company has also made two locations in the same quarter for its P. W. Oden 1 and 2. East of the producer, the Standard Oil Company of Louisiana will drill Hunter Estate 2 in Section 8-17-14, while in the same section with the producer the company will drill Hunter Estate 3 to the east. Ohio Oil Company has also made location for its Hunter Estate 1 in the same section and to the east.

The producer after flowing by heads refused to flow after 2½-inch tubing with packer was set. Friday, after the well was blown with air, it began to flow again and yielded 125 barrels between two p. m. and seven a. m. Saturday. For the 24 hours ending Monday morning at seven a. m. it made 102 barrels. Total depth is 2422 feet with 12 feet of sand.

When Ohio Oil Company made a drill stem test of Lynn 1, which has total depth of 3077 feet, the well tested 15 fourbles of oil in 11 minutes time. The test was made from 3064 to 3077 feet. This well is a half mile east and slightly south of the same company's Sam Oliver 1 in SW SW Section 7-17-13, which extended production a quarter of a mile east in the southeast extension of Champagnolle, and then went "dead". Six and five-eighths inch casing has been set in Lynn 1 at a depth of 3065 feet.

Meanwhile Ohio Oil Company's W. N. Raulston 1 in Section 12-17-14, that caused the drilling campaign in the southeast extension of Champagnolle, continues to make over 1000 barrels of net oil daily along with about the same amount of salt water. On May 9, the well's net oil yield was 1061 barrels.

Magnolia Test Coring

Magnolia Petroleum Company in C. M. & K. Wilson 1, in Section 25-15-18 after missing a drill stem test from 2960 to 2973 feet, is now coring at 2961 feet. This is approximately 100 feet below the level from which the discovery well, Charles McDonald's Wilson B-1, is producing, its total depth being 2866 feet. Cumberland Petroleum Company is preparing to resume coring at 2884 feet in Burton 1, in Section 24-15-18. Root Refineries is waiting for cement to set at 2845 feet in Wilson 1, an offset 500 feet to the east of the discovery well and in the same section. Operators plugged back to this level after swabbing salt water and oil at 2863 feet and coring to 2869 feet. Arkansas Drilling Company has spudded in Crowley 1, in Section 27-15-18 and is drilling at 100 feet. Charles McDonald has abandoned Wilson B-2 in Section 25-15-18, a 300 foot northern offset to the discovery well. The well showed salt water at 2906 feet. No casing was set for a final test. Six miles to the north, Timberlake and associates are drilling at 2272 feet in Wright 1, in Section 25-14-18. Flaucher and associates are still shut down at 2475 in Bucks 1, in Section 7-15-17 and George Kouri and associates have not yet started rigging up for Henson 1, in Section 25-15-18. Unconfirmed reports are to the effect that Charles McDonald plans two other tests soon, offsetting his discovery well.

Zwolle District Wildcat

While eight interesting wildcats in North Louisiana and South Arkansas were officially added as failures during the last week, one of them being in the new Zwolle district of Sabine Parish, Louisiana, R. L. Gay, Trustee, apparently has added his second producer in that district in Bowman-Hicks 3, western offset to the discovery well, Bowman-Hicks 2, (old series), both being in Section 14-7-14. The discovery well has flowed 50 barrels with clock-like regularity since December. During the last week the offset was tested in a broken formation at 2178 feet, and is flowing 10 barrels daily through tubing. However, the owner may try to reset liner in an effort to increase the flow. The first well was completed at 2131 feet.

Gay tested salt water in a drill test in his new Bowman-Hicks 2, in the same section, which he is drilling as a deep well. The test was made in sandy shale at 3569 feet. Arrangements are being made to deepen. Gay has abandoned Sabine Lumber Company 1, in Section 13-7-14 as a dry hole at 2936 feet and has spudded in Long-Bell Lumber Company 1, in Section 26-8-14 and is drilling at 350 feet. A. H. Tarver on the same lease in Section 29-8-13 is drilling at 2070 feet.

Other Louisiana wildcats which were listed in the failure column during the week are: Big Ben Oil Company's Stewart 2, in Section 15-18-12, southeast of Bellevue district, Bossier Parish, which was abandoned as a dry hole at 1300 feet after being shut down for some time; J. O. A. Carper's Hammack 2, in Section 34-18-16, Caddo Parish, Blanchard district, which was dry at 920 feet; Woodley and Collins' Harp 1, in Section 22-22-7e, Morehouse Parish, which tested salt water at 3063 feet and Gay's Sabine Lumber Company 1, in Section 13-7-14, Sabine Parish.

Arkansas also recorded four wildcat failures. Charles McDonald's Wilson B-2, in Section 25-15-18, which tested salt water at 2906 feet. J. W. Olvey in Cottrell 1, a wildcat in Section 22-19-17, Tubal district, Union County, tested dry and abandoned at 3503 feet. In Ashley County, J. C. Marcum junked and abandoned De Yambert 1, in Section 5-19-4, at 3312 feet. Robert H. Dedman, after being shut down at 1145 feet for months in Hillman 1, in Section 20-10-13, Dallas County, abandoned the well as dry.

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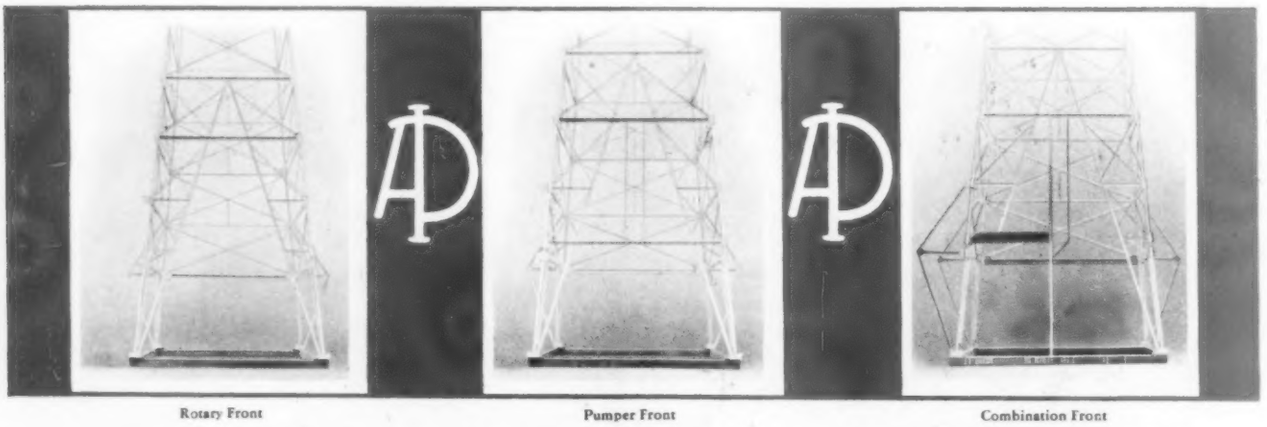

Rotary Front | Pumper Front | Combination Front

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Stocks in All Principal Fields

Rotary Fishing and Fishing Tools

(*Continued from page* 38)

The tool shown in Figure No. 32 is made by setting a slip into the side of a diamond point bit. This style of tool will pull only lightly, however, for the slips will spread the pipe and let go, or perforate the same.

When a rock bit has stuck, as for instance, by boulders falling into the hole above it, and a pull will not loosen it, to pull the drill pipe in two may part it anywhere down the pipe. Incidentally, it is easy to pull pipe in two while being used for fishing; the art in fishing is to get the fish without pulling the pipe in two. But, the rock bit fish may be gotten out of the way by shooting the pipe off just above the bit, measuring the depth of shot, using a few sticks of dynamite. After the pipe has been shot off, it may be possible to drill down to the bit and retrieve it, but usually, a shot caves the hole, and if boulders fall in, the hole may sidetrack and go on down without touching the bit again. If the bit cannot be completely sidetracked, however, subsequent drilling may cut the drill pipe in two where it rubs the rock bit and make another fishing job, particularly where drilling is done in rock, slowly.

FIGURE 44

Whipstock

For completely sidetracking, a whipstock may be run, so as to leave the old hole gradually without a sharp angle such as might cause a twist off. An improved whipstock is shown in Figure No. 33. This tool has a hinged joint, with the hinge joint located midway of the tool, at the bottom of the tapered upper section. This whipstock takes a set against the side of the hole, bending at the hinged joint, and rarely falls into the hole afterward and make trouble.

Milling past a fish, in harder formations may be done with the usual type of milling tools, shown in Figures 34 and 35. A milling assembly should be long enough to go out at an angle not sharp enough with the hole axis to bend the drill pipe or casing so much as to make trouble with the same, or make a crooked hole that may be difficult to pump.

The milling assembly, Figure 36, has Gray milling tools with a Hughes round nosed point milling tool, which is an effective assembly in going through formations for sidetracking. In soft formations, such as shale or loose sand, an ordinary diamond point bit will sidetrack, but in

FIGURE 38

FIGURE 39

FIGURE 40

FIGURE 41

FIGURE 42

FIGURE 43

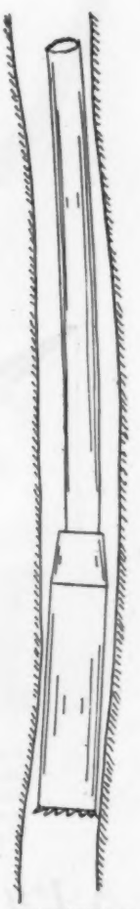

FIGURE 45

you Get

MORE PUMPING P

SECO VALVES

These Straight-Shot Valves are for all makes and sizes of pumps. They are particularly adapted to slush, hot and cold water, gasoline and hot oil. All parts are made of high carbon, forged steel except the inserts which are of a special make and used exclusively in Seco Valves.

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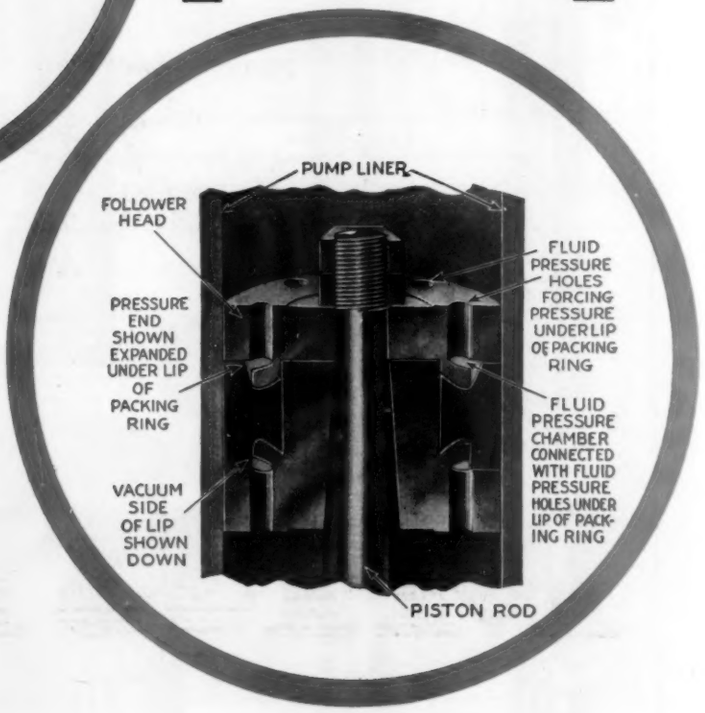
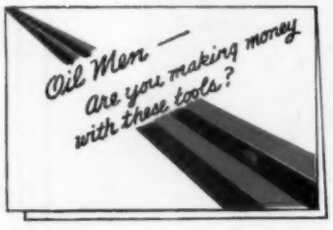

PUMP LINER
FOLLOWER HEAD
PRESSURE END SHOWN EXPANDED UNDER LIP OF PACKING RING
VACUUM SIDE OF LIP SHOWN DOWN
FLUID PRESSURE HOLES FORCING PRESSURE UNDER LIP OF PACKING RING
FLUID PRESSURE CHAMBER CONNECTED WITH FLUID PRESSURE HOLES UNDER LIP OF PACKING RING
PISTON ROD



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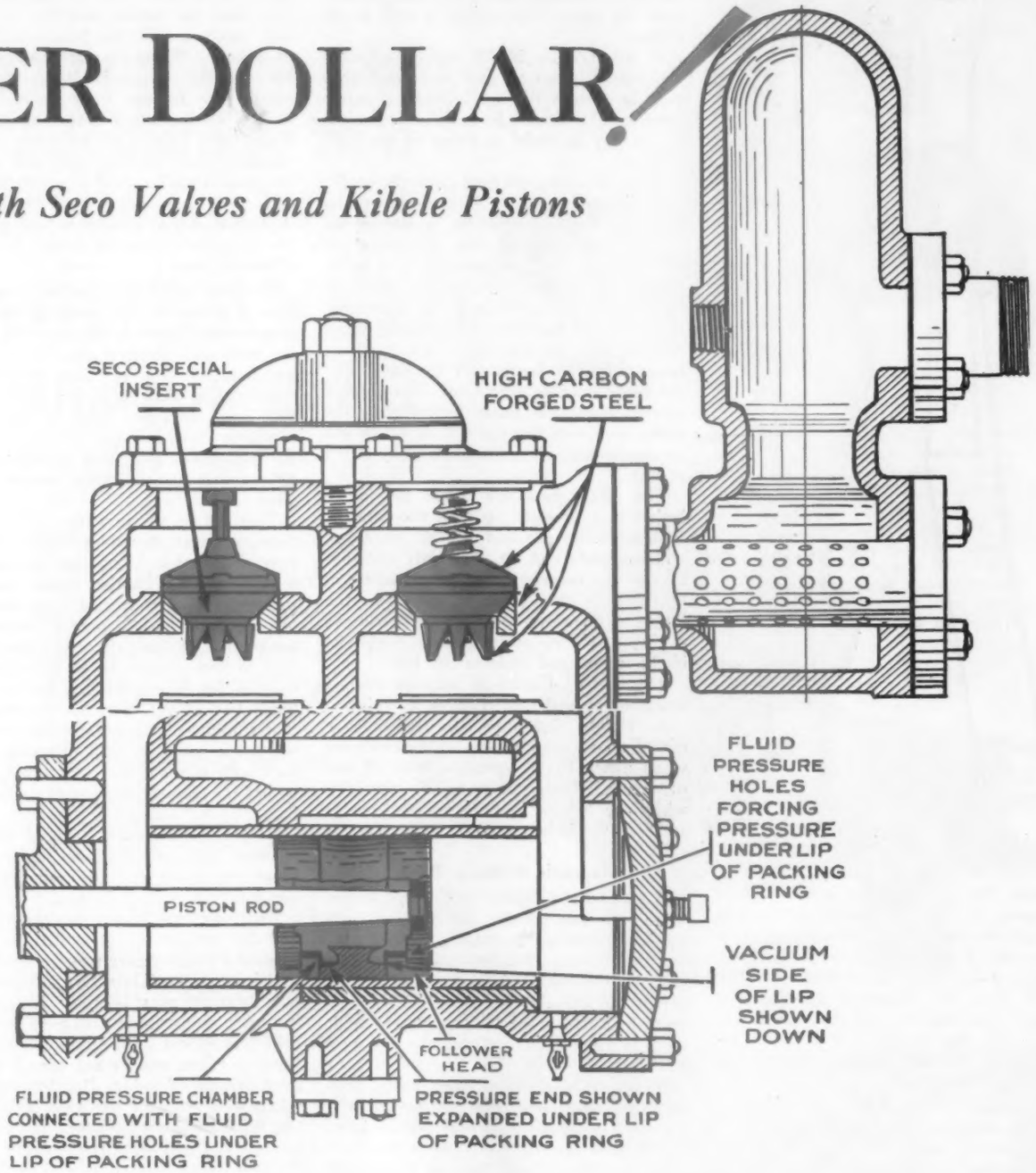
With Seco Valves and Kibele Pistons


SECO SPECIAL INSERT
HIGH CARBON FORGED STEEL
FLUID PRESSURE HOLES FORCING PRESSURE UNDER LIP OF PACKING RING
PISTON ROD
VACUUM SIDE OF LIP SHOWN DOWN
FOLLOWER HEAD
FLUID PRESSURE CHAMBER CONNECTED WITH FLUID PRESSURE HOLES UNDER LIP OF PACKING RING
PRESSURE END SHOWN EXPANDED UNDER LIP OF PACKING RING

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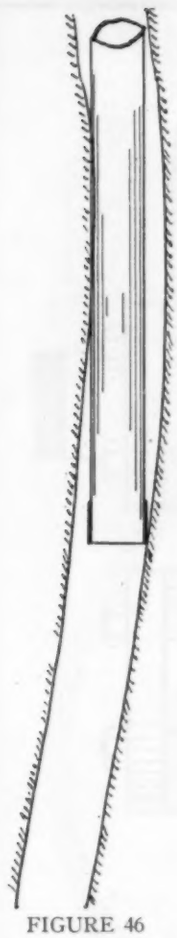

FIGURE 46

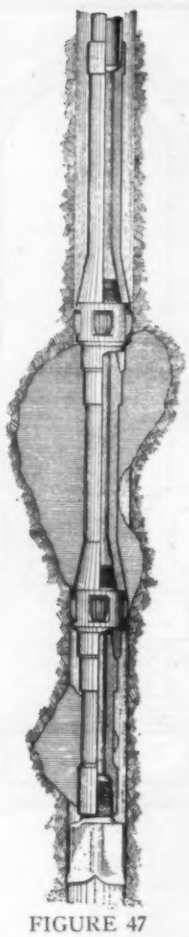

FIGURE 47

hard formations, the going is made faster with milling tools.

When the side tracking is to be done in casing, it becomes necessary to mill through the casing wall, which requires a whipstock. To mill out through the body of pipe, rather than out through a collar on the pipe, the whipstock illustrated is designed to stop at and rest the lower end on the pipe shoulder in a collar, insuring that the milling tools will go out in the body of the pipe.

The assembly of Figure 36 and the milling tools shown are especially adapted for milling out of casing for going by a fish in the casing, or for re-drilling wells.

When the milling tool of Figure 35 is hollowed out, or bored through with a larger hole, a sliver of pipe cut out in milling will go up in the hole and come out with the tool when the job is completed.

There are straight whipstocks made, from steel forgings or castings, for any kind of work; when milling out of casing or when sidetracking in relatively hard formation, nothing but solid whipstocks will take the side thrust of the bit or tool. A whipstock made by bending one of a piece of pipe inward, to taper the same, will flatten its whole length, and fail in its purpose in hard work.

Milling tools will also shave a fish into small pieces if the fish cannot be recovered, using the end milling tool of Figure 35. If this tool is to be run in casing, however, there should be some kind of a guide immediately above the same to prevent the teeth from cutting a hole in the casing.

A fish tail bit blade, broken off near the shank, is not so easy to catch, for it may lay across the hole. Made of hardened steel, it cannot be milled out readily, for it may be about as tough as the milling tool.

Some kind of grab may catch the blade; that shown in Figure 37 is made out an ordinary diamond point bit by cutting the V out with a torch, then threading the inside by chucking the shank in a lathe. This tool, let down easily on top of the blade, then rotated slightly by hand until it catches on the side of the blade, when further rotation may let it go down, as indicated by a jump, felt by hand, and the blade may be picked up. One side of this tool may be made longer than the other, to insure that the side of blade will be caught when it is let down and rotated slightly.

The writer once saw a fish tail bit 15 inches long brought up with this kind of tool, with the pin end of the bit down, and the blade end up. The only explanation of the reversed position of the bit in this case is that when it fell down the hole, it reversed ends when passing a cavity, for in no other manner could the bit have changed ends in the hole.

The tool of Figure 37 may be washed down, or even drilled through a bridge.

A weight indicator, or drillometer makes an accurate means of determining when a fish has been taken hold of and of the pull being taken on it, especially when the fish is light in weight, but is stuck in the hole.

Magnetic Fishing Tools

A magnetized fishing tool, made of the small diameter needed for fishing, will not lift a fish out by outside surface contact of the magnetized tool with the steel to be fished out. But, if the fish is such that it will enter a magnetized socket, and there by surrounded by a magnetic field, there is some likelihood that the fish may be lifted out.

Numerous designs of such tools have appeared, that have been successful in a measure, in certain types of fishing jobs. These have been provided with dry batteries in a shell above the tool, to provide energizing electric current.

As a general proposition, however, if we can get a fish to enter a socket, some kind of a slip or dog tool in the socket will bring the fish out and since magnetic tools cannot pull as hard as a tool equipped with slips, magnetic tools have not reached wide use, and perhaps will not do so until some kind of design is made that will enable taking a much greater pull.

Jars

The standard tool jar is an ideal fishing tool, especially in the long stroke type, using a heavy stem. But this is not adapted to rotary work. The nearest thing to it in general use is the Kammerdiner jar, shown in Figure 38. This tool utilizes the stretch of pipe, or elasticity, to strike a blow upward. Taking hold of the fish, with some kind of fishing tool, say a spear, with these jars between the upper pipe used for fishing, and the stuck pipe, and taking a pull, the pipe stretches due to elasticity. Then, turning the upper pipe, the threads of the jar let go, and the upper pipe springs back to its original length, setting up a severe upward jar. These are re-set by lowering, rotating slightly, when another pull and jar may be done. Usually, drill pipe will jump out of a collar, or out of the thread of a tool joint, but if it does not let go there, the pipe itself may be jarred in two by repeated work.

To save drill pipe, that is stuck in the hole, a string of left hand threaded pipe is sometimes used to unscrew the pipe in the hole and bring it out. From one to as many as 45 joints may unscrew and come out at once with this method. But left hand threaded pipe is not always available; used infrequently, it gets mixed up with other pipe, and is somewhat of an expense and nuisance around a pipe yard.

This led to the invention of reversing tools, such as shown in Figure 39. The reversing tool locks against the casing of a well by one or another means, and when the upper pipe is turned right hand, the lower pipe turns left hand to unscrew the lower pipe. Where there is casing in the hole to lock against, these have been successful, but where there is an open wall, there has as yet been no reversing tool that would lock against rotation after being set in an open wall. Perhaps, if the well wall is rock, the tool would lock in it, but the greater portion of wells is not rock.

However, left hand threaded pipe may be used below the back-up tool to reach from the lower end of casing down to the fish.

Drill pipe may be cut into short lengths and the sections so cut, pulled out of the hole. An inside cutter may be used where tool joints do not interfere, otherwise, an outside cutter must be used. This method, however, ruins much drill pipe for, when drill pipe is cut in the middle, it has no upset portion, and is not suited for the hard drilling of today. But, in deep holes, where the value of the pipe is less than that of the hole, when other methods fail, this method will bring the pipe out, saving the tool joints at least, as well as the hole.

An outside cutter of the cut and pull type is shown in Figure 40. Instead of the straight socket at bottom, this tool may be provided with a bowl and socket, to facilitate entrance, and the bowl may have a hook, to catch and straighten pipe up in a cavity.

Die Nipples

Die nipples and die collars may screw on to a fish and take hold, although these are usually employed for joining a parted string of casing.

The die nipple of Figure 41 is an example, showing the lower threads fluted to facilitate cutting a thread in the fish. To facilitate entrance, a wooden plug may be driven in this tool and pointed at the lower end, so as to guide the nipple into place, with a circulation hole through

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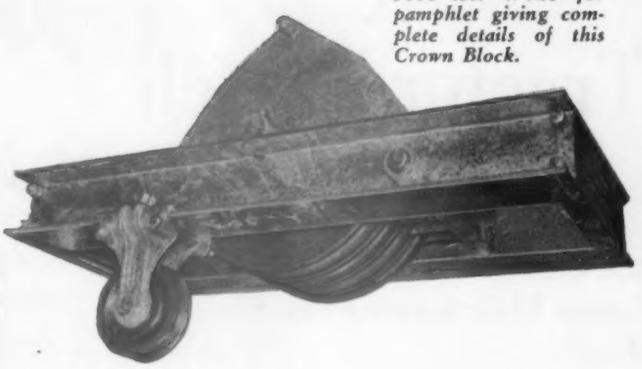
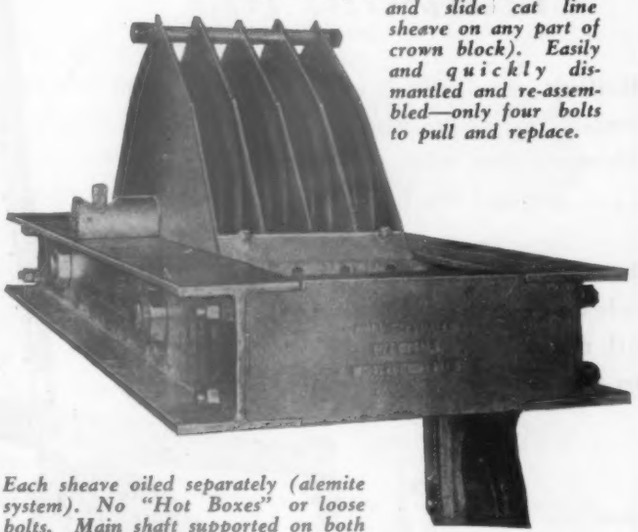


American Roller Bearings, Alemite Lubrication, Heavy Duty construction, simple and quickly adjusted to meet driller's requirements (loosen 2 bolts and slide cat line sheave on any part of crown block). Easily and quickly dismantled and re-assembled—only four bolts to pull and replace.



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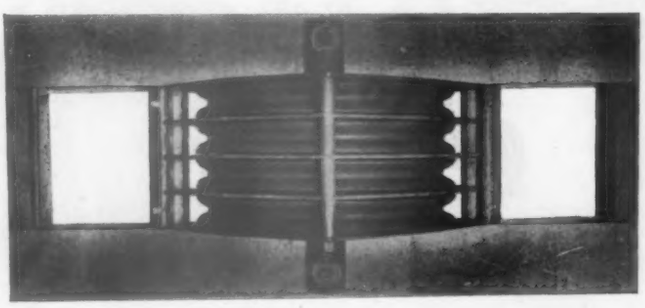

Looking straight down, note that the frame has a bearing on the water table all the way round, giving a solid—evenly distributed load.

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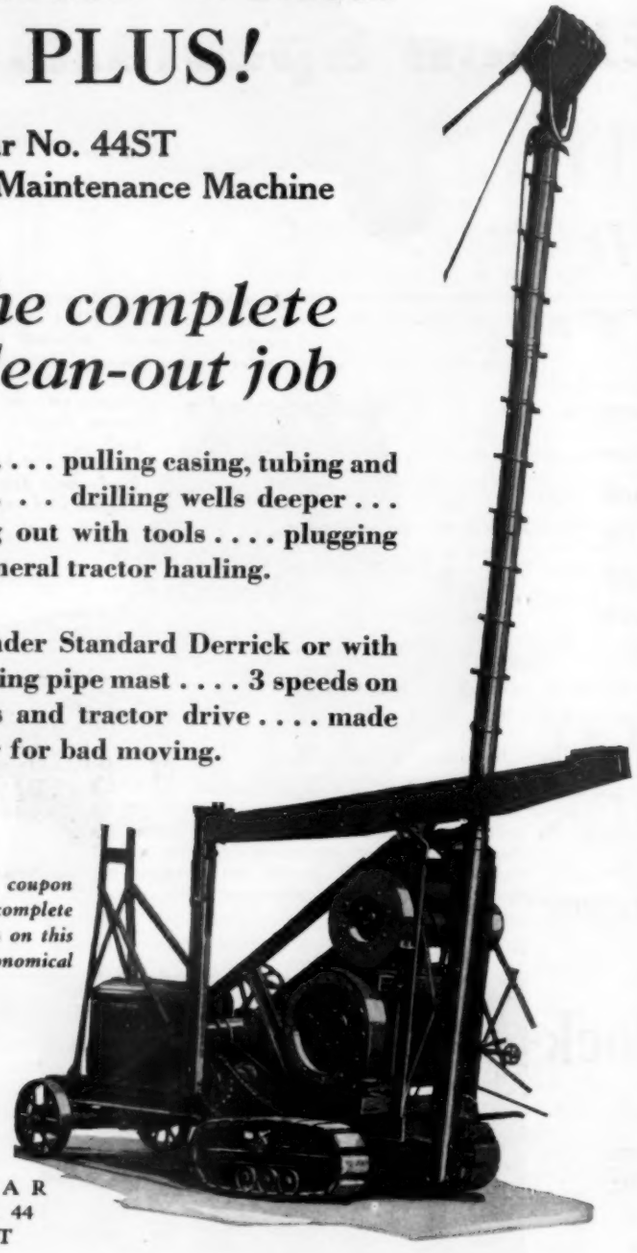

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Oil Weekly, 5-17-29

the wood. The die collar, Figure 42, with the fluted threads on the inside of lower end, for going over, may also be fitted with wooden guide plug. The plug, however, should be somewhat smaller than the inner diameter of the die collar, so as to enter the fish and allow the die to screw down. The upper end of the wooden plug should fit tightly, however.

After connection is made to join a parted string of casing, the wooden plug may be easily drilled out.

However, when parted casing is to be joined, the standard die nipple or die collar should be modified so that it will screw down to pass the flutes into collar up on the fish, to close against water from the hole entering casing. The die collar should also be treated for the same reason. And when making up, necessarily, the nipples should be catheaded up for making a tight joint against leakage of water into the casing.

Either type of nipple may be fitted with a bell socket with hook, or with a plain hook, to facilitate making connection.

Die nipples and collars will not let go easily, when the fish must be pulled, but when the fish is short, such as a lost basket, this type of tool is fairly safe.

Sand Tester

We now have another tool in the field that, although it is invaluable, in testing, has set up fishing to some extent, which is the sand tester. It is not necessary that a sand tester get stuck or frozen in a well, for, if the tester is run, set and opened for test, and allowed to stand open only a short time, with the well prepared beforehand for test, the tester will not stick.

In the writer's estimation, there has been no tool as ingeniously devised as this for testing out probable producing sands, and they should therefore be run so as to not stick.

The hole should first be pumped with mud clear of sand and cuttings, for sufficient time to clear the hole of both, so that when the tester is set and opened, such cuttings and sand will not be in the hole to settle down on top of the tester. Than done, any enthusiasm set up by a gas or oil blow through the drill pipe should not induce any one to allow the tester to set any longer than necessary, the duration of which depends upon the territory being drilled and the condition of the hole. Any fishing that may be required as a result of testing may be done with the usual tools, adding pump pressure to pipe pull to force the tester upward and loosen the same, or to pull the tester core out of the tester packer.

Mouse Trap

The mouse trap, Figure 43, is taken from standard tool practice, and is now a familiar rotary tool, included here to show the rotary method of picking up pieces of steel and to make the list of tools more complete. The mouse trap may be made with a single hinged means of closing the bottom, which is made like a foot valve, with the valve in a single piece. A full opening is not presented by this valve for a piece of steel to enter

WALWORTH

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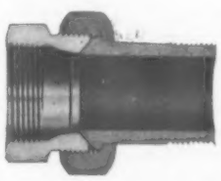
This is the Kewanee Union Elbow and Male Elbow

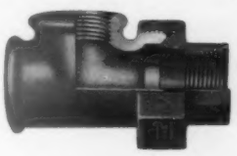
Kewanee Union Elbow with Female Union.



Kewanee Male and Female Union. Cross section.

You certainly know the Kewanee Union, if only by its reputation. But do you know that the construction features of this famous union have been carried out in a whole family of fittings?

There is not an inserted part in any of them. Nothing to work loose under the strain of expansion and contraction on the line. And, like the Kewanee Union itself, every one of these fittings is individually air tested under water before it is shipped. You can count on that.



Kewanee Union Tee with Female Union.

Kewanee Male and Female Union.

The Kewanee 400

This new union retains all the mechanical principles of the Kewanee Union but adds the great advantage of forged steel in place of the malleable iron ring. This gives the Kewanee 400 a higher working pressure capacity and raises it another notch in service requirements.

Working Pressure Ratings

KEWANEE 400		
⅛″ to 2″ Steam	400 lbs.	500° F.
Cold Oil, Water or Gas (non-shock)	2000 lbs.	100° F.
KEWANEE UNION (Malleable Ring)		
2½″ and 3″ Steam	250 lbs.	500° F.
Cold Oil, Water or Gas (non-shock)	1200 lbs.	100° F.
3½″ and 4″ Steam	200 lbs.	450° F.
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past the valve into the body, unless the valve is first curved to lay snugly against the inner body wall, and then machined to the required diameter.

The mouse trap will also fish out gravel that interferes with drilling in hard formation into which the gravel will not pass into the well wall. For this work, the mouse trap may be fitted with a plunger, with the plunger attached to the drill pipe used for fishing, and the trap with a sliding fit in the plunger, much like a sand pump.

When pipe is in tension, while pulling on a fish, it may be rotated also, to see if the combination of pull and rotation will loosen up. In addition, circulation, or if circulation cannot be established, then pressure down to the bit, using a packing off fishing tool inside or outside of the stuck pipe, assists in loosening.

When pipe is pulled on hard, the threads will loosen somewhat but rotation screws them tight again. Evidence of this may be had in any string that has been pulled on hard, and in pulling casing, the threads are usually loose, although cat headed up when the casing was set.

But the combination of pull, twist and inside pressure may not all be exerted maximum at the same time, for when twisted, pipe has not as much strength in tension, nor under pressure either.

If a string of drill pipe is made up tightly, by catheading each joint up as it goes into the hole, the string may be used to some extent for backward rotation, and might even unscrew the pipe down in the hole being fished for, although this is not always safe and considerable skill is required to make sure that the lower pipe section is unscrewing, and not the upper section.

Backward rotation may cause a tool to enter, or go over a fish, however, when forward rotation does not, and when fishing, pipe necessarily must be made up tightly for that reason, and for safety against a pull, also.

Low carbon drill pipe, used for fishing, and pulled hard may stretch and take a permanent longer set length if the strain exceeds the elastic limit of the steel in the pipe.

Smaller drill pipe is subject to stretch and permanent set more than large, of course, with the same pull. The writer has measured drill pipe in which stretch was apparent, after it came out of the hole, and found that the diameter had decreased from one-eighth-inch to three-sixteenths-inch in some of the upper joints as well as lower. The pull that will set up greater than permissible stress in pipe may be measured with weight indicators and with the drillometer when either is used on the rig; when there is no means of measuring the pull, it may be approximated by placing a gauge, a steam pressure gauge, inside of the throttle valve, to determine steam pressure being turned into the cylinder, and by means of engine torque, computed therefrom, and chain gear ratio, and wire rope gear ratio, a close estimate of the pull may be had so as to be able to run the pull up high enough, yet not so high as to endanger the pipe.

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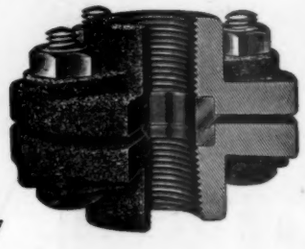

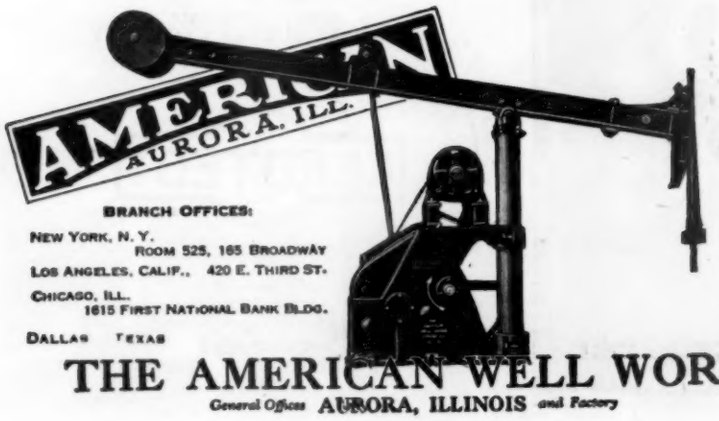

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tary shoes preliminary to setting casing may also properly be included in this article. Running a rotary shoe, of the type in Figure 44 is somewhat better practice than running a shoe equal to the diameter of casing to be set; the belled out teeth of the shoe shown insures more safety to casing going down.

The shoe may be run on a test joint, as shown in Figure 45, where 10-inch casing surrounds the drill pipe, and a shoe measuring 12½ inches across the teeth is used. If the test joint goes to bottom, the casing might follow, but not in all cases. As shown in Figure 45, the test joint is going by a crooked section of hole, the drill pipe above the joint bending to let the joint by. But, as in Figure 46, the casing is stiffer than drill pipe, and will not bend around the curve of the hole as readily, hence, where the curve of the hole is in soft formation, the casing shoe digs out into the wall, as shown by plugs of gumbo brought out in the shoe of strings that will not go.

The remedy of course, is not to make crooked hole. The cure is to ream the hole with a three point contact reamer of some kind. A three point contact reamer for hard formations is shown in Figure 47. The sections composing the tool are made very heavy, as shown, to prevent flexing in the hole and the points of contact being three in number, the reaming is done where necessary, either ahead, at the bit, or in the middle at the reamer.

As a matter of fact, casing will go down a well wall composed of rock of fair hardness, because the shoe will not dig inot rock as easily as clay, and the casing conforms to the well curves; it is crooked hole in softer formations that usually prevent casing from going; or, if a hole is crooked in rock, and straightens out immediately below the rock, in a soft formation, the rock portion may project the casing shoe into the well wall below the rock.

Engineering Study of Cotton Valley

The most difficult problem in connection with the engineering study of the Cotton Valley, Louisiana, oil field being made by the United States Bureau of Mines, Department of Commerce, has been the correlation of the Trinity sands. The sands are lenticular but occupy more or less definite positions in a zone about 100 feet in thickness. All drilling is done by the rotary method and the logs of the formations, unless coring is done, are unreliable, which accounts for the confusion that has existed regarding the deep sands. A number of cores were available for study and from these, geologic logs have been made. The formations were plotted on a scale of 20 feet to one inch, as the cores examined represented one foot intervals. From a careful examination of these logs and a study of geological information obtained from some of the other com-

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Patents Pending

W-K-W
Drills Straighter Hole
Reduces Twistoffs

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APPRAISALS
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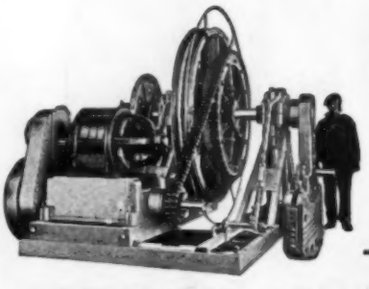
SURVEYS
ESTIMATES OF OIL RESERVES

AN EXPERIENCED OIL FIELD ORGANIZATION



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Hynes, California and Sweetwater, Texas

panies, a number of conclusions regarding the subsurface structure have been drawn.

A preliminary set of drawings has been completed, which includes a number of north-south sections through the field, contour map, and two drawings showing the water encroachment. The structure contour map shows a fairly regular structure with the possible exception of the southwest part of the field. The interpretation of edge water encroachment for wells penetrating upper and lower parts of the pay formation is shown on separate drawings. These data are based largely upon the dates on which water appeared in the wells. The extreme rapidity with which water encroached up-dip, regardless of contours, probably gives a sound reason for producing wells in formations, as found in the Cotton Valley field, more or less gradually under studied control.

A number of water samples have been analyzed, the results of which indicate that there is no large difference in chemical composition between upper water and water closely associated with oil in wells widely scattered over the structure.

Safety in Operation Would Reduce Compensation Rates

(Continued from page 42)

used. Their laws even provided means for making refractory operators protect their equipment. This procedure established the right psychological attitude in those states and safety education spread without difficulty. This not only prevented radical rate increases in those states, but has actually been productive of lower rates in some instances.

Mistake About Who Pays

Apparently the whole trouble in Texas has been the result of negligence on the part of the insurance carriers, and the wrong psychological attitude on the part of the employers. The oil industry has had a mistaken understanding in regard to who pays the bills. Most operators have learned that the industry must pay its own workman's compensation losses, but some are not entirely convinced yet. It is a fundamental, inescapable fact, and must be recognized. But when the oil operators understand the situation, they must help solve the problem of re-educating their employees, and even their doctors.

The following example is illustrative of the condition which has existed. The general manager of an oil company, who has recently had a bitter experience with greatly increased workman's compensation insurance rates, and whose company has a substantial charge under the merit rating plan, got a small particle in his eye, and went to his clinic to have it removed. After the doctor had finished with his treatment, the executive asked the charge, and was told that it was two dollars. The doctor then hesitated and said, "Can't you be considered an em-

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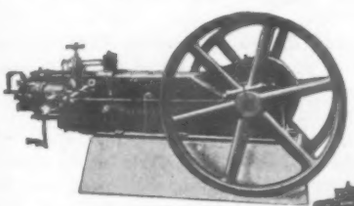
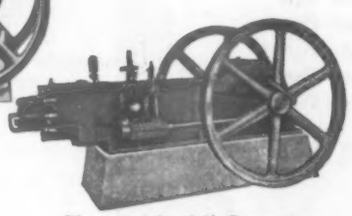
And loading the Franklin is as quick and efficient as a military movement. The few parts necessary to remove for loading come off easily, and are quickly assembled after unloading.

Yet, the best part of the Franklin is that you've got something when you get it set up. The Franklin Oil Drilling Engine has a fine record of performance. They show power, speed and flexibility.

The Franklin pumping engine displays a sturdiness that has gained many friends on the oil field. These pumpers come in 30, 40, 50 and 75 horsepower.



Type OF Oil Drilling Engine



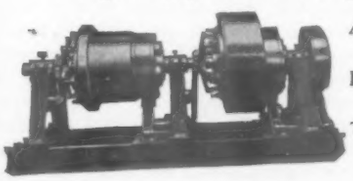
Type AO Oil Pumping Engine

The 2 SD Drilling Clutch

Two speeds in either forward or reverse—all bearings enclosed —run in oil or grease.

All brake band and clutch discs adjusted without stopping the engine.

All brackets, bell cranks, toggle arms, brake cranks, levers, driving discs, spiders and sliding sleeves made of steel.



All similar parts of clutch interchangeable.

Belt driven — no shaft breakage.

The 2 SD Clutch will pull the largest bailer wthout faltering.

Type BG for Cable Tool Drilling, etc.

Here is a clutch that will operate satisfactorily and smoothly for cable tool drilling or for pumping operations. The BG type has one speed forward and reverse. It is much the same construction as the 2 SD clutch.

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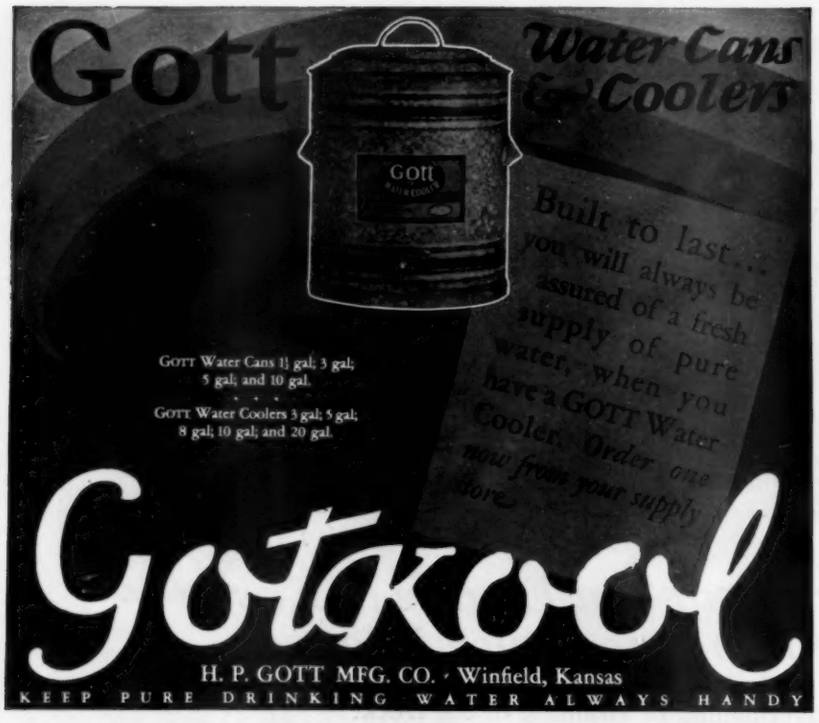
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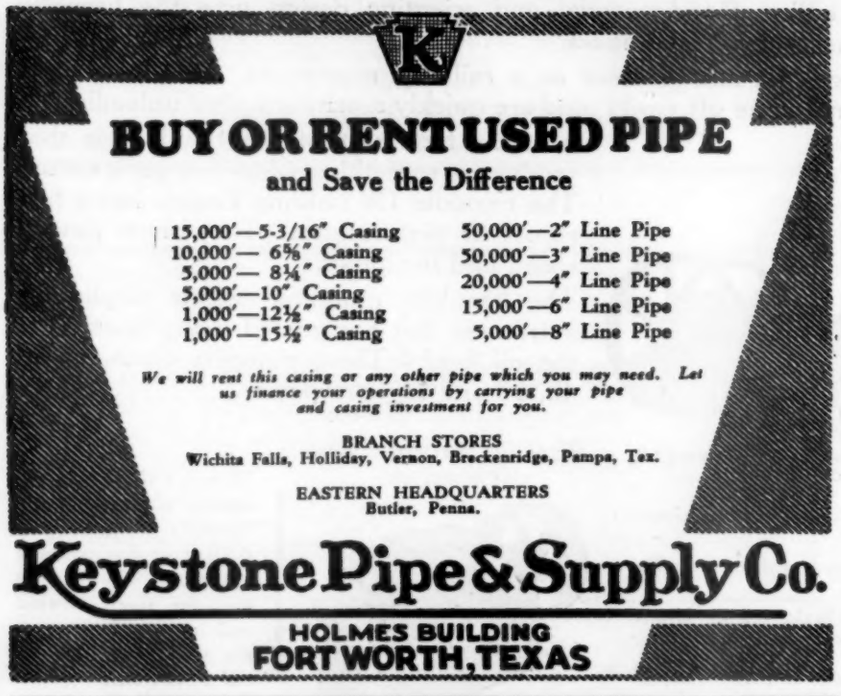
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ployee of the company? If you are, you can forget the charge, and we will send the bill to the insurance company and collect five dollars." The executive almost had apoplexy. The doctor was re-educated in short order, and learned very forcibly that the company would ultimately pay a substantial portion of that bill, if it was cared for by the insurance company, under the merit rating plan. This executive now checks every doctor bill before it is paid by the insurance company, and can now easily understand why medical bills have increased 150 per cent. since 1922. However, this same executive is up against the problem of re-educating all his employees, and it will be some time before he will get the same results that would have been obtained long ago if the wrong psychological attitude had not been at first adopted by him, and encouraged by the insurance companies.

Accidents can be prevented, and accident cost reduced. The truth of this statement has been demonstrated conclusively by too many plants, and too many industries for there to be any doubt in regard to its veracity.

The cement industry, for example, has reduced its compensation losses from 50 to 60 per cent. in the United States through organized accident prevention activities, during the very years that the drilling rate was increasing 100 per cent. in Texas. There have been any number of employers in Texas who have reduced their accident cost 80 pr cent. in the last two or three years, but we are sorry to say that a substantial debit (charge above the base rate) had to be applied to their operations to bring them out of their lethargy.

The oil industry has had its lesson, and we believe that the time is ripe for a concerted, relentless drive throughout the industry to eliminate accidents. What can be done in other fields of endeavor can also be done by the oil industry, but if there are any operators who believe that they can escape the moral obligation which is imposed upon them to prevent accidents, they must change their opinion.

For best results, close co-operation between the employer and his insurance carrier must be maintained, and a high degree of mutual confidence must exist. The insurance carriers must lose no opportunity to place before their policy holders the latest developments in the field of scientific accident prevention. The employer must provide safe equipment and proper and safe supervision. He must impress the subject of safety upon his employees. There is no real reason why the oil industry should be considered the most hazardous business activity in Texas.

Minute analysis shows definitely that every accident has at least one cause which might have been eliminated, and that practically every accident is preventable. If a determined campaign to eliminate hazards and hazardous employees in the oil industry is conducted, we believe that the next few years will show a remarkable drop in the rates applicable to it.

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When you order J & L Seamless Steel Casing, or any other J & L Tubular Products, you obtain, at no additional cost, delivery service that is equal in every respect to the unsurpassed quality and dependability of the pipe itself.

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Your Guarantee of Prompt Service

J & L own and operate, not only the most modern tube mills, steel plants, and blast furnaces, but also mines and quarries, and transportation facilities. Thus, we control all factors entering into volume production of J & L tubular products.

Large and complete stocks of tubular goods, welded and seamless, are carried in this extensive J & L warehouse and yard at Memphis, Tenn., to meet the service requirements of the trade and for quick replenishment of our distributors' stock in the field, used in serving emergency needs.

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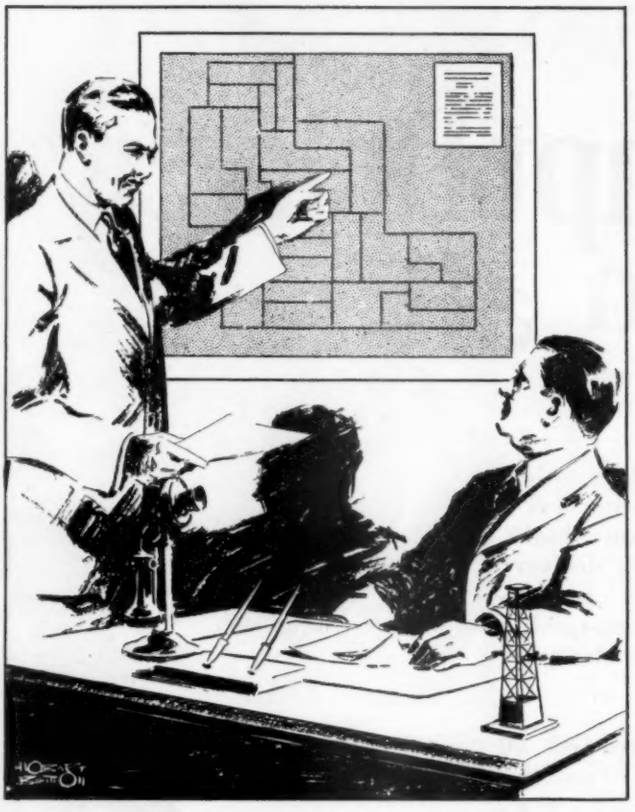
PITTSBURGH PENNSYLVANIA



Save "Shopping Around" Dollars

The oil industry is Gargantuan. Its huge appetite for iron and fiber and brawn must be appeased. Manufacturers and merchandisers, big and little, efficient and inefficient offer their wares and their services.

The tempo is fast and there is little time for "shopping around." You save valuable time and worry in your other needs—for clothes, for furniture, for automobiles, for investments—by going direct to reliable houses. In buying oil field supplies you naturally rely upon the counsel of a supply house that has proven its ability to select for you the efficient, time tested oil field equipment from a house well stocked so as to be able to deliver when promised—ON TIME.

Whether your needs be remote or immediate, counsel now with a Norvell-Wilder man.

[See pages 356 to 367 in the Composite Catalog of Oil Field and Pipe Line Equipment.]

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NORVELL WILDER SUPPLY CO.

BEAUMONT HOUSTON SHREVEPORT FORT WORTH

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
BELRIDGE—		
Belridge Oil Co., 30	50	700
INGLEWOOD—		
Shell Oil Co., Rindge 3, wo	250	2650
KERN FRONT—		
Chanslor-Canfield Midway Oil Co., No. 24	900	2155
LONG BEACH—		
Apex Pet. Co., No. 13-B	300	6895
Hancock Oil Co., Signal 17	3750	7185
RINCON—		
General Pet. Corp., Thompson 3	500	3465
SANTA FE SPRINGS—		
George F. Getty, Inc., No. 22, wo	4000	6392
No. 26, wo	5500	6385
Richfield Oil Co., Howard 1, wo	4000	6465
The Texas Co., Matern 3-13, wo	3500	6910
Matern 3-11, wo	2800	6700
Twin Bell Syn. No. 3, Well 1, wo	1500	6500
ROUND MOUNTAIN—		
Shell Oil Co., Freeman 4	300	1725
SEAL BEACH—		
Marland Oil Co., Bixby 23	2100	5645
VENTURA—		
Associated Oil Co., Lloyd 65	4500	7345
Hartman 9	1000	7300

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Empire, Sharrock 10, sw se 27-27-5e	125	2735
COWLEY COUNTY—		
Benedum and Trees, Smith 6, sw se 10-31-3e	30	3079
ELLIS COUNTY—		
Gypsy, Weiland 1, se, 35-12-16w	200	2972
McPHERSON COUNTY—		
Mid-Kansas, Yoder 1, c nw sw, 8-20-4w	*	4000
RUSSELL COUNTY—		
Gyjsy Oil, Marland, 1, sw, nw, 28-13-15w	*	3348
Liggett et al, Durham 1, ne, 20-11-15w	*	....
SEDGWICK COUNTY—		
Connell et al, Cross 1, ne, 27-25-1w	12	2695
Prairie et al, Smyser 3, sw se se, 36-25-1w	150	3399
Marland, Goodrich 2, nw ne sw, 16-25-1e	400	3038
Prairie et al, Smyser 4, se, 36-25-1w	*	3647
Bu-Vi-Bar et al, Seffton 1, sw se sw, 12-25-1w	*	3505
Ramsey, Schuessler 1, sw, 1-25-1e	*	3503
Skelly, Stambach 1, sw, 31-25-1e	*	285

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Magnolia, Watson 2, ne nw se, 19-1s-3w	10	3302
Denny 3, ne, 30-1s-3w	30	2819
Hefner, nw se sw, 33-1s-3w	35	4105
Pollock 1, ne, 8-1s-3w	*	4937
COTTON COUNTY—		
Consolidated, Indian 1, ne, sw, 11-3s-12w	*	2502
Silurian, Chambers 4, ne, se sw nw, 2-2s-10w	45	2177
Chambers 5, sw, nw se nw, 2-2s-10w	40	2170
CREEK COUNTY—		
Beal & Plumb, Walker 1a, nw se nw, 26-18-19e	*	2019
H. C. Detrick et al, Kimble 1, ne, 25-14-9e	60	2952
S. P. Smith and Coffee, Maloney 2, cwl nw nw, 19-18-11e	*	732
C. G. Tibbens, Narchubby 2, sw, se, 26-15-8e	*	3227
Wilcox O.&G. Co., Craig 1, nw, 30-14-10e	*	3000
GARVIN COUNTY—		
Magnolia, Newberry 6, sw, nw se se, 14-1n-3w	*	1865

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial This Week	Prod. Last Week
Arkansas	8	5	..	1	1	..	7	4	...	72
California	18	14	16	11	..	..	2	3	34,950	14,200
Illinois	..	6	..	2	..	..	..	4	...	180
Indiana	1	7	1	1	..	3	..	3	2	150
Kansas	13	19	6	7	..	1	7	11	917	2,785
Kentucky	21	22	14	16	..	1	7	5	391	754
Louisiana	21	12	7	5	4	3	10	4	1,970	1,935
Michigan	10	17	8	14	..	1	2	2	2,890	7,546
Ohio	43	47	15	18	15	17	13	12	480	314
Oklahoma	74	79	45	39	9	12	20	28	19,508	14,169
Pennsylvania	83	14	73	6	7	6	3	2	243	75
Texas	140	146	64	78	13	10	63	58	43,108	16,169
West Virginia	27	20	8	5	12	13	7	2	188	641
Total	438	408	250	203	57	67	131	138	102,677	58,990
Increase this week	30	..	47	..	..	..	..	..	43,687	...
Decrease this week	..	..	..	..	10	..	7	..	...	...

Company, Well and Location	Initial Production Bbls.	Depth
GRADY COUNTY—		
Clark & Cowden, Fred 3, c sw sw, 23-5n-7w	¶3	1952
HASKELL COUNTY—		
San Bois Gas Co., Watkins 1, cel ne ne, 22-8-20e	¶1½	920
HUGHES COUNTY—		
Producers & Refiners Corp., Roberts 1, c ne nw, 34-9-10e	*	3231
Superior & Amerada, Jimpoy 1, sw, se, 4-8-9e	¶1	3030
Bunte et al, Buckner 1, ne, nw, 12-8-8e	155	3382
I. T. I. O. Co., Bingham 3, sw se sw, 8-5-8e	270	2725
JEFFERSON COUNTY—		
O. V. Beck, Seay 2, se, sw sw se, 35-6s-5w	140	1217
KIOWA COUNTY—		
Bickett et al, Ditmar 2, c nw se, 19-6n-16w	*	695
MUSKOGEE COUNTY—		
Arthur, Garrett 10, c ne sw, 33-15-18e	20	1088
W. J. Metzger, Francis 8, sw, ne sw, 1-14-18e	30	905
OKFUSKEE COUNTY—		
C. L. McMahon, Fixico 2, sw, nw se, 29-12-10e	400	3171
Atlantic, Simmer 6, se, 11-10-11e	30	2111
Mid-Continent et al, Rowe 1, nw, ne, 33-10-9e	*	3551
OKLAHOMA COUNTY—		
I. T. I. O. Co., Fuzzell 1, sw, nw, 19-11-2w	¶55	4022
OKMULGEE COUNTY—		
American-Maracaibo, Henry 1a, ne, nw se, 27-12-12	170	3374
L. C. Wheeler et al, Stake 1, nw se se, 9-14-12e	*	2792
J. K. Leard, Calloway 1, nw, ne nw ne, 19-11-13e	*	3980
OSAGE COUNTY—		
Kay County Gas Company, "B" 6, sw se nw, 22-24-7e	¶32	2426
I. T. I. O. Co., 408, ne, 27-27-11e	¶13¼	1916
Fields & Potts, 3, sw ne nw, 30-23-12e	*	1810
L. G. Stanley, 2, ne se ne, 14-21-8e	*	607
Clint Moore Est., et al, 22, se sw, 9-21-9e	..	2705
PAWNEE COUNTY—		
Pure, Loretta 1, nw, se, 35-20-6e	*	3677
Hay et al, Copeland 1, se sw sw, 26-20-9e	85	2060
Roy Sears et al, Wiggs 2, ne, nw nw, 35-20-9	90	2067
PONTOTOC COUNTY—		
Ramsey, Kerr 1, ne, se, 1-4-7e	38	2024
Superior, Mauldin 3, sw nw nw, 32-5-5e	80	2625
POTTAWATOMIE COUNTY—		
Pure, Wallace 2, se sw nw, 17-8-5e	*	4087
Wallace 1, sw, nw, 17-8-5e	..	4531
Amerada and Marland, Calvin 2, sw, nw, 7-8-5e	..	4446
Phillips, Keenan 2, sw, se, 6-8-5e	..	3286
Sinclair, Nesbit 1, ne se nw, 18-7-5e	35	4151
Magnolia, Rowe 1, nw ne sw, 18-7-5e	30	4310
Gypsy, Roseman 3, sw nw ne, 26-7-4e	345	4238
Carter, McGee 1, ne se nw, 26-7-4e	90	4259
Magnolia, Billington 2, nw ne, 22-7-4e	¶12	3665
Minnehoma, Simms 1, nw, se, 16-7-4e	70	3980
Independent, Wallace 3, (OWDD), sw, 14-7-4e	230	4212
Magnolia, Green 2, ne ne nw, 20-8-5e	490	4323
Tidal, Everetts 2, ne sw sw, 18-8-5e	345	4179
W. B. Pine, Linger 2, nw sw ne, 18-8-5e	225	4144
Mid-Continent, Shelton 3, sw ne ne, 18-8-5e	20	4109
W. B. Pine, Smith 1, sw ne, 8-8-5e	955	4041
Amerada, Fehlig 1, sw, ne, 7-8-5e	290	4306
Prairie, Campbell 7, sw ne sw, 18-8-5e	560	4337
Campbell 8, nw se sw, 18-8-5e	90	4154
SEMINOLE COUNTY—		
Gypsy, Andrews 1, ne se nw, 27-10-7e	*	4648
Marland, Strothers 1, nw se ne, 5-10-7e	*	4942
Sunray, Amos 1a, ne se sw, 7-5-8e	*	4270
Magnolia, Hurst 1, sw se se, 24-8-5e	*	4551
Sinclair O. & G., Nakotche 1, ne nw sw, 18-5-8e	80	2432
Louisiana, Statler 2, (OWDD), sw se sw, 7-5-8e	40	2730
Mid-Continent, Smith 4, se nw ne, 5-7-7e	5835	4235
Carter, Fuswa 3, ne, nw, 18-8-6e	1250	4399
Burke-Greis, Mayes 3, ne, 1-9-5e	1200	4396
Gypsy, Nevins 1, se nw se, 32-10-6e	635	4330
Prairie, Coker 1, sw, 1-7-6e	335	4215
Woods 3, ne nw sw, 26-7-6e	445	3246
Woods 4, ne, sw, 26-7-6e	¶50	3160
Slick, Cudjo 2, sw nw nw, 26-7-6e	1200	3166
Baker 5, sw se sw ne, 24-9-5e	1200	4008
Baker 6, nw se ne, 24-9-5e	960	4012
Producers & Refiners, Johnson 2, se sw nw, 24-7-6e	900	4345
TULSA COUNTY—		
F. A. Baker, Davis 1, se ne, 26-19-11e	15	2795
WAGONER COUNTY—		
Horner, Barnett 1a, nw, se, 34-18-17e	¶2	847

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
ASHLEY COUNTY (ANDRIES)—		
J. C. Marcum, DeYambert 1, 5-19-4e	*	3312
OUACHITA COUNTY—		
Chas. McDonald, Wilson B-2, 25-15-18	*	2906
UNION COUNTY—		
Magnolia Pet. Co., Kelly 1, 9-17-14	¶3	2822
J. W. Olvey, Cottrell 1, 22-19-17	*	3503

(Continued on page 92)

(Continued from page 91)

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
South Penn Oil Co., Bingham 400, tr 93	2	....
Bingham 151, tr 43	4	....
Bingham 151, tr 44	8	....
Bingham 533, tr 104	2	....
Bingham 533, tr 105	5	....
Bingham 533, tr 106	3	....
Bingham 533 tr 107	10	....
Bingham 450, tr 101	2	....
Bingham 439, tr 120	2	....
Bingham 439, tr 121	7	....
Bingham 532, tr 106	2	....
Burdick 64	2	....
Burdick 66	2	....
Burdick 69	2	....
Taylor 35	2	....
Riddle 7	4	....
Riddle 8 and 10	pressure	....
Riddle 9	2	....
Hazlewood Oil Co., lot 23, tr 06, 07, 08, 09, 010	pressure	....
Lot 23, tr H-7	2	....
Lot 23, tr H-9	2	....
Lot 23, tr H-18	2	....
Lot 22 tr 52	2	....
Associated Producers Co., Bingham 212, tr 13	7	....
Bingham 212, tr 14	5	....
Bingham 214, tr 18	7	....
Bingham 214, tr 19	10	....
Bingham 568, tr 12	12	....
Simpson & Co., Bingham 368, tr 55, 57, 58, 60 wells	pressure	....
Bingham 368, tr 56	2	....
Bingham 368, tr 59	4	....
A. H. Wiborg, Meldrun 3	4	....
Meldrun 4	4	....
Meldrun 5	4	....
Evans & Wood, Huntington 9	3	....
Huntington 10	3	....
Forest Oil Corp., Fee, 11 wells	22	....
Fee, eight wells	pressure	....
Forest Pet. Corp., Fee, 11 wells	22	....
Fee, 20 wells	pressure	....
Tanner-McKean Co., Griffith 43	7	....
J. A. Walters Est., Walters 13	8	....
BUTLER COUNTY—		
Blair & Stewart, Blair & Co. 7	5	....
H. L. Swartzlander, Swartzlander 1	¶1	....
Lang & Co., Doerr 1	5	....
Gettman & Garvin, Scott 1	4	....
Burton Bros, Galla 1	¶1	....
McKees Rock O. & G. Co., Boartz 1	*	....
Gallagher & Co., Gallagher 1	*	....
VENANGO COUNTY—		
C. Surrena, Surrena 25	7	....
M. R. Hoffman, Hoffman 19	3	....
H. H. Craig & Co., Berringer 1	3	....
Fryburg Motors Co., Bush 2	¶1	....
Bush 3	¶1	....
Oil City Nat. Bank, Myers & Co. 4	2	....
S. Y. Ramage, Stiles 74, tr 84	2	....
CLARION COUNTY—		
H. J. Crawford, Hess 17	3	....
Freeman Oil Co., Fry 4	4	....
Whitling Sons, Whitling 6	2	....
K. L. Smith & Co., Smith 3	¶1	....
Alum Rock Gas Co., Detwiller 4	2	....
F. C. Deemer, Meherten 6	2	....
CENTER-MIDDLE FIELD—		
Johnson & Nelson, McWilliams 1	2	....
J. M. Sharp, Lot 107, tr 1	2	....
Clarendon Producing & Ref. Co., Lot 109, tr 1	2	....
BUTLER COUNTY—		
M. B. Cypher & Co., Ginsleberger 1	*	....
Elliott & Reimer, Harvey 1	¶¼	....
BEAVER COUNTY—		
Laughner O. & G. Co., McBane 1	¶1	....

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
MUSKEGON COUNTY—		
Reliable O&G Co., Murphy 1	1200	1685
Puritan-Majestic Oil Co., Koning 1	800	2016
Paramount Oil Co., Kieft 1	300	2033
Johnson O&R Co., Cihak 2	40	1695
L. E. Kennedy, Giles 2	250	2050
Royal Pet. Co., Lauenstein 1	*	1700
Muskegon Oil Corp., Yonker 1	100	2030
Kent-Muskegon Oil Co., Engeman 1	100	2034
ISABELLE COUNTY—		
Chippewa O&G Co., Joclyn 2	100	3590
OTTAWA COUNTY—		
Ottawa Pet. Co., Constock-Kunkle 1	*	2141

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
Ryder & Richmond Oil Co., Ryder & Co. 1	3	....
Ryder & Co. 2	3	....
Ryder & Co. 3	3	....
Ryder & Co. 4	3	....
N. V. V. Franchot, Franchot 18	4	....
Franchot 19	2	....
Franchot 20	7	....
Forest Oil Co., Forest, three wells	6	....
Forest, one well	pressure	....
Garr Oil Co., Garr 1	2	....
M. J. Crowley & Co., Crowley 12	7	....
Cuba National Bank Co., Fee 25	2	....
Sepany Oil Co., Stewart 6	7	....
Zaph 8	10	....
Barton & Chiles, Barto & Co. 7	3	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
TYLER COUNTY—		
Hadley Bros., Smith 1	¶¼	....
Ohio Oil Co., Dudley 1	*	....
J. H. Pentz, Smith 2	*	....
South Penn Oil Co., Hought 4	*	....
LINCOLN COUNTY—		
South Penn Oil Co., Alford 4	4	....
United Fuel Gas Co., Holaby 16	¶½	....
Earl Cameron, Stone 5	¶½	....
CALHOUN COUNTY—		
W. S. Dailey, Stump 1	¶1½	....
M. H. Crowley & Co., Mitchell 1	2	....
Hope Const. & Ref. Co., Schock 1	¶¼	....
ROANE COUNTY—		
South Penn Oil Co., Fields 1	125	....
United Fuel Gas Co., Holco 2585	¶1¼	....
GILMER COUNTY—		
South Penn Oil Goff 5	20	....
J. A. Kelly & Co., Kelly 1	15	....
MARION COUNTY—		
Henry Tennent, Briton 1	¶2	....
Laughlin-Munroe, Morris 2	¶1½	....
BOONE COUNTY—		
United Fuel Gas Co., Saas 2598	¶2	....
Cameron O. & G. Co., Stone 1	¶2	....
RITCHIE COUNTY—		
B. F. Miller Farm Oil Co., Miller 1	*	....
R. W. Elder, Price 1	*	....
JACKSON COUNTY—		
South Penn Oil Co., McCarty 5	15	....
WIRT COUNTY—		
Harry Athey, Rathbone 4	5	....
WETZEL COUNTY—		
Maxon Oil Co., Shea 10	2	....
HARRISON COUNTY—		
Hope Nat. Gas Co., Allen 1197	¶2	....
CLAY COUNTY—		
Hamilton Gas Co., King 1	¶¼	....
WOOD COUNTY—		
Crocker & Rinehart, Strain 1	*	....
BRAXTON COUNTY—		
United Fuel Gas Co., Lengle 1	*	....

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
WAYNE COUNTY—		
B. S. Huffaker, Huffaker 5	*	....
HANCOCK COUNTY—		
H. A. Henry, Payne 2	*	....
ALLEN COUNTY—		
J. F. Finch, Supener 9	5	377
ESTILL COUNTY—		
A. J. Calvert, Cox 12	2	....
Superior Oil Corp., Binneger 16	1	....
JOHNSON-MAGOFFIN COUNTIES—		
Hamlin-Tanner Oil Co., Tackett 4	3	....
Boston Southwestern Oil & Gas Co., Conley 16	5	....
DAVIESS COUNTY—		
Huff & Calderwood, Salmon 6	40	....
Eastern Gulf Oil Co., Murray 8	15	....
OHIO COUNTY—		
Snowden-McSweeney Co., Duke 3	100	....
Mecca Oil Co., Wells 21	75	....
Carpenter & Co., Howard 1	40	....
Whittaker 9	*	....
Leeper Oil Co., McKinley 5	30	....
Young & Lee, Ezell 10	20	....
Sirman Co., Farmer 14	30	....
S. H. Russell & Co., Greer 1	25	435
Ellis & Co., Howard 3	*	565
Russell & Randolph, Brown Heirs 4	*	415
H. H. Bastrus & Co., Evans 5	*	570
Howard 1	*	....

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
SPENCER COUNTY—		
D. D. Flannagan, Dr. Hoover 4	2	756

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
NOBLE COUNTY—		
B. C. Robinson, Springer 4	15	535
C. E. Stephans & Co., Rohrer 1	¶¼	....
Local Oil Co., Mallett Heirs 7	*	1162
Otto Poling & Co., Feldner 1	*	....
Cain O & G. Co., Mullett 4	*	....
WASHINGTON COUNTY—		
J. B. Braden & Co., Hall 7	2	....
Thomas O. & G. Co., Fish 2	¶¼	1956
R. H. Warren & Co., Edwards 1	*	....
Jerry Buckley, Happ 2	*	....
HARRISON COUNTY—		
Stock & Co., Perry 1	5	....
Hall-Dysert Oil Co., Seibert 3	2	1611
JEFFERSON COUNTY—		
A. H. Sutton & Co., Williams 7	2	....
MORGAN COUNTY—		
Ohio Fuel Gas Co., Snearly 2	¶¼	1541

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
Ohio Fuel Gas Co., Elliott 2	¶1¼	1577
Phillips 2	¶1¼	1626
Sargent 1	¶1¼	761
Wiser Oil Co., Jones 1	¶¼	1400
HOCKING COUNTY—		
Kachelmacher Estate, Tracey 31	190	3462
Gordon Oil Co., Thrush 5	12	2967
Squire Northern Dev. Co., Bradley-Cobb 19	*	3404
MUSKINGUM COUNTY—		
Rymipler Oil Co., Jones 1	125	....
Ohio Fuel Gas Co., Berr y1	¶¼	4103
William Kline & Co., Stine 1	*	3727
PERRY COUNTY—		
Whitmer O&G Co., Axline 1	*	2774
Melick Oil Co., Curl-Strate 1	25	3473
Crowley & Carr, Guy 1	60	3517
SUMMITT COUNTY—		
East Ohio Gas Co., Hess 1	¶¼	....
Chenowith 1	*	....
F. A. Brendall & Co., Boettler 1	¶¼	....
ASHLAND COUNTY—		
Robinson & Co., Devinney 3	¶¼	....
Cable 1	*	....
The Kemrow Co., Snyder 1	*	....
LICKING COUNTY—		
Ohio Fuel Gas Co., Johnson 1	¶½	2902
Sterl Brown, Frost 1	10	....
GUERNSEY COUNTY—		
Cambridge Glass Co., Kerr 2	¶¼	951
R. D. Hood & Co., Gardner 1	*	3766
MEDINA COUNTY—		
East Ohio Gas Co., Jalensics 3	7	....
HOLMES COUNTY—		
Leonard O&G Co., Patterson 3	¶½-3	....
KNOX COUNTY—		
Ohio Fuel Gas Co., Reed 4	¶1¾	....
COSHOCTON COUNTY—		
Ohio Oil Co., McKelvey 1	¶¼	3444

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
SENECA COUNTY—		
Columbus-Tiffin Oil Co., Ropp 1	12	1227
Hulce & Kundtz, Haugh 1	*	1446
SHELBY COUNTY—		
Eilerman Oil Co., Sherman 2	10	....

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Big Ben Oil Co., A. Stewart 2, 15-18-12	*	1300
CADDO PARISH— —		
L. M. Emlet, Glassell 9, 10-20-15	*	2312
J. O. A. Carper, Tr., Hammock 2, 34-18-16	*	920
Texas Co., Caddo Sch. Bd. 2, 16-15-12	*	859
BOSSIER PARISH—		
F. M. Hood, Mayer 1, 30-16-11	¶2½	2455
C. W. Jones, McDade 1, 31-16-11	*	2536
RED RIVER PARISH—		
Odell & Lawton, Richardson 4, 25-13-11	15	2556
SABINE PARISH—		
R. L. Gay, Tr., Sabine Lbr. Co. 1, 13-7-14	*	2936
MOREHOUSE PARISH—		
Woodley & Collins, Harp 1, 22-22-7e	*	3063
OUACHITA PARISH—		
Magnolia Pet. Co., Fee 1, 14-18-4e	¶2-19	2220
Maury Drilling Co., McEwen 1, 29-19-4e	¶3.3	2196
Nemours Corp., Frierson 2, 16-19-4e	¶3.9	2192

DAILY PASSENGER SCHEDULE

DIVISION NO. 1

Read Down			Read Up
Dep. 6:10 A. M.	Dallas	Arr.	4:20 P. M.
Dep. 8:55 A. M.	Fort Worth	Dep.	1:10 P. M.
Dep. 10:45 A. M.	Oklahoma City	Dep.	2:05 P. M.
Arr. 11:45 A. M.	Tulsa	Dep.	12:30 P. M.

DIVISION NO. 2

Dep. 12:00 M.	Tulsa	Arr.	12:15 P. M.
Dep. 1:15 P. M.	Springfield	Dep.	10:40 A. M.
Arr. 2:15 P. M.	St. Louis	Dep.	8:30 A. M.

DIVISION NO. 3

Dep. 1:00 P. M.	Tulsa	Arr.	11:35 A. M.
Dep. 3:45 P. M.	Coffeyville	Dep.	10:50 A. M.
Arr. 5:20 P. M.	Kansas City	Dep.	9:00 A. M.

PASSENGER TARIFF

	Dallas	Ft. Worth	Okla. City	Tulsa
Dallas	$	$ 5.00	$21.00	$29.00
Ft. Worth	5.00	....	18.00	29.00
Okla. City	21.00	18.00	....	11.00
Tulsa	29.00	29.00	11.00	....
Coffeyville	35.00	35.00	17.00	6.00
Kansas City	51.00	51.00	33.00	22.00
Springfield	46.00	46.00	28.00	17.00
St. Louis	63.00	63.00	47.00	36.00

	Coffeyville	Kansas City	Springfield	St. Louis
Dallas	$35.00	$51.00	$46.00	$63.00
Ft. Worth	35.00	51.00	46.00	63.00
Okla. City	17.00	33.00	28.00	47.00
Tulsa	6.00	22.00	17.00	36.00
Coffeyville	....	16.00	23.00	42.00
Kansas City	16.00	....	30.00	....
Springfield	23.00	30.00	....	19.00
St. Louis	42.00	....	19.00	....

Each Passenger Allowed 25 Pounds Baggage.
One-way tickets good for stop-over of 24 hours at Division Point—Tulsa

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If time is worth money. . . . If a business day is worth saving. . . . . If the American business man is crowded for daylight hours as he has long complained. . . . . Then let him open his eyes to the possibilities of air travel.

The tempo of the day is speed. Time waits on no man. And he who hesitates is lost in the modern crush of competition. The horse-and-buggy days are memories along with the ox cart. Aggressive business today uses the ***swiftest*** facilities to be had.

Now we have air travel. Now we have three-motored, all-metal, giant air transports — products of the ages. Speed, safety, comfort — at ten cents a mile! Air travel at motor car cost.

Southwest Air Fast Express has standardized on Ford Tri-Motor, all-metal, 14-passenger transports. Each plane is manned by both a captain and a mate, either capable of flying or landing the ship. A former army meteorologist anticipates weather on each course and pilots are advised how to avoid atmospheric disturbances. And *one* motor will land the plane.

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Dallas—Love Field
Ft. Worth—Meacham Field
Oklahoma City—Municipal Field
Tulsa—Municipal Field
Coffeyville—Municipal Field
Kansas City—Fairfax Field
Springfield—Municipal Field
St. Louis—Lambert Field

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
EVANGELINE—		
Abshire Bolyard Oil Co., Syndicate Fee Simple 5	55	1585
HACKBERRY—		
McLain Oil Co., Ellender 1	*	4525
Cameron Oil Co.-Rycade Oil Corp., Duhon 4	5	3155
Moon Oil Co., Sanner 3	600	3237
Sun Oil Co., Vincent 2	80	3437
Federal Pet. Co., Duhon 2	275	3209
Rex Pet. Corp., Noble 2	940	3369
Sunshine Oil Co., Benoit 1	*	2147
Vincent 1	*	2080

TEXAS

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Humphreys Corp., Kirby A-7	*	3464
BATSON—		
Acorn Oil Co., Paraffine 69	*	1160
BLUE RIDGE—		
Moody Corp., West-Schenck 6	*	4590
HIGH ISLAND—		
Gulf, Smith A-2	200	2970
HULL—		
Republic Prod. Co., Dolbear 50, dd	*	4190
Humble, Guedry 22, dd	1000	3655
MOSS BLUFF—		
Humble, Sterling 4	*	3619
ORANGE—		
Brownie-Babbett Oil Co., McLean 8, dd	40	2885
PORT NECHES—		
The Texas Co., Kuhn 1	1900	3160
RACCOON BEND—		
Humble, Thompson 3	300	3325
Sanders 2	500	3230
Kalieszewski B-1	¶1½	1004
SOUTH LIBERTY—		
The Texas Co., Staiti (Monroe) 20	40	1635
Navarro Oil Co., J. C. Baldwin 4	*	2105
Empire O. & G. Co., Grogan 2	610	3425
Macon Oil Co., Barrett 1	300	2890
Jefferson Oil Co., Turner 1	*	715
SPINDLE TOP—		
Yount-Lee Oil Co., McFaddin 102	*	2800
Unity Oil Co., Gladys City 11	*	....

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
C. H. Lyons et al, State Line-Furrh 1, J. Lipscomb sur	¶2	2366
PANOLA COUNTY—		
Natural Gas Prod. Co., Floyd 4, B. C. Jordan sur	¶2	946

SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
SALT FLAT—		
The Texas Co., Merriweather 7	175	2756
DUVAL COUNTY—		
Robert Driscoll, Fee 15, Driscoll ranch	400	2899
Saxet Gas Co., Crowder 5, Sec. 250, Schoolfield-O'Byrne pool	¶2-20	2360
Hahl 2, Schoolfield-O'Byrne pool, Sec. 250	¶2	2356
The Texas Co., Hahl 3 Schoolfield-O'Byrne pool, Sec. 250	100	2338
Magnolia, Hahl B-6, Schoolfield-O'Byrne pool	100	2342
WEBB COUNTY—		
O. W. Killam, Bruni 9, Section 4, Arispe grant, Cole field	¶40	2345
R. O. Barnsley, Fee 1, Caroline-Tex pool, blk 15, Sec. 268	¶25	2100
ZAPATA COUNTY—		
Trapshooter Reilly Oil & Royalty Co., Hinnant 2	50	1605
SALT FLAT—		
The Texas Co., Merriweather 7	175	2756
Gulf, R. W. Carter 11	240	2674
J. L. Northcutt 1	1500	2682
Humble, Moses-Baggett A-8	125	2676
Tiller 1	1550	2661

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Baker-Kynard et al, Marr 1	*	1250
Culberson Bros. et al, Suttles 1	*	2040
Greene Prod. Co., Moore 7	5	1259
Owens, Inc., et al, Turner 1	*	1850
CALLAHAN COUNTY—		
Belva Oil Co., McGee 1	*	1802
L. G. Bradstreet & Holder, Miller 12	90	1661
Redmond et al, Moore 1	90	1865
COLEMAN COUNTY—		
Canyon O&G Co., Keller 1	*	403
Humphreys Bros., Inc., & Union Oil Co., Sanger Bros. 1	¶11	1183
Kitchings et al, Witcher 1	*	1907
Owens & Green et al, Westbrook 1	25	1890
C. R. Troxwell et al, Wells 1	*	1604
COMANCHE COUNTY—		
T. P. Coal & Oil Co., Frank Kirk 2	10	2735
W. J. Sawyer et al, Cagle 1	*	2880
EASTLAND COUNTY—		
Mitcham et al, Winge 1	*	1564
ERATH COUNTY—		
Snebold & White, Fulfer 1	¶1½	3220
PALO PINTO COUNTY—		
Gordon & Gholson et al, Tecz 1	¶2¼	4077
Dixie Drilling Co., Lane 1	¶3	4000

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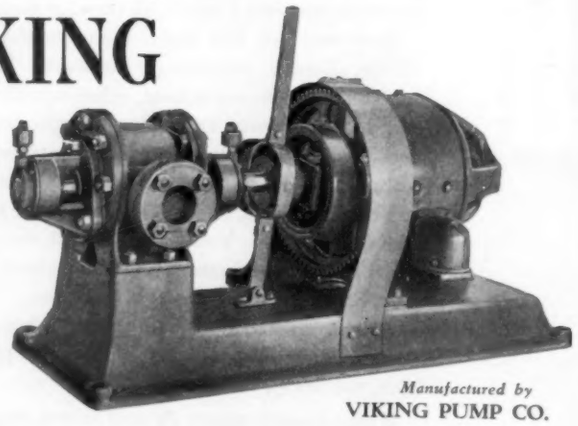

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VIKING PUMP CO.

For the transfer of heavy oils under pressure or water supply systems.

Extra heavy construction and ball bearing equipment . . . May be equipped with friction clutch (as indicated) at slight extra cost . . . Made in 50, 100 and 200 gallon capacities.

SOUTHERN ENGINE & PUMP COMPANY
HOUSTON, TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
SHACKELFORD COUNTY—		
Cranfill-Reynolds, Inc., Moberly 1	*	1300
Simms Oil Co., Lones 9	*	1465

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
GRAY COUNTY—		
Operators Oil Co., S. Faulkner 1	¶60-3850	2790
The Shamrock Co. et al, Chapman 2-A	*	2916
HUTCHINSON COUNTY—		
Marland Prod. Co., Johnson 1-C	500	3058
L. W. Timms et al, J. W. Moore 1	110	3100

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Archer Drilling Co., Thompson 2	25	1597
Bailey-Damuth Drlg. Co., Jackson 1	*	1580
Beavers & Rose, Hayter 1	*	1352
F. C. Grebin et al, Henning 4	40	1443
P. F. Gwynn-Boyd Drlg. Co., Oil Investment Co., Fee 1	65	1593
Hart & McLaughlin, Stone 1	*	1725
Harry Hines et al, Hamilton 1	*	1400
Frank Hutcheson et al, Fee 6	†	1164
D. O. Johnson et al, Wilson 8-A	30	1569
Panhandle Ref. Co., Turbeville 1	*	1575
F. Payne et al, Parrish 3-A	95	1577
The Texas Co. et al., K&K 2-B	60	1819
Texas Co. & Long, Lasiter 1	*	1503
CLAY COUNTY—		
Mid-Continent Holding Corp., Wright 4	*	840
Wright 5	35	836
Wright 6	*	849
E. J. Stump & Co., Boddy 1-B	**	1955
COOKE COUNTY—		
M. Mitchell et al, Mitchell 1	*	1718
Pure Oil Co., Embry 7	40	1202
ELECTRA—		
Panhandle Ref. Co., Burnett 4-A	*	1440
GRAYSON COUNTY—		
Simpson-Fell Oil Co., H. Guilloud 1	¶11	900
Texas-State Oil Co., G. W. Wall 1	¶5¼	892
JACK COUNTY—		
Buttram Pet. Co., Van Hooser 1	25	2051
Murback-Holmberg et al, Warren 1	*	603
K-M-A AND IOWA PARK—		
Riner & Bailey, Michie 4-A	205	1791
WILBARGER COUNTY—		
Clark et al, Waggoner 1	190	1896
Consolidated Oil Co., Waggoner 1-0	350	1870
Easter Oil Co., Waggoner 2-C	200	1924
Fain-McGaha Oil Co., Waggoner 10-L	10	2380
Waggoner 12-L	75	2340
Golding-Cochran et al, Waggoner 4-H	250	2406
Grayback Dev. Co., Waggoner 1	*	2021
Melat Oil Co., Waggoner 3-A	70	1998
Phillips Pet. Co., Waggoner 4-SS	80	2325
Staley-Wynne & Co., Waggoner 1-R	130	1925
The Texas Co., Waggoner 1-0	*	2572
Waggoner Ref. Co., Waggoner 6-G	25	2422
YOUNG COUNTY—		
Callender et al, Hamilton 1	*	950
Continental Oil Co., Campbell 7-B	145	889
Kimbrell & Lyles, Dyer 3	5	583
Lloyd Oil Corp., Gregg 2	*	540
T. G. Shaw et al, Kisinger 1	80	2531
Smith et al, Bentley 1	*	855
Paul Steed & Gaus, Snider 16	*	705
Walton et al, Prideaux 4	15	500
Pridaux 5	25	485
Wilson & VanBuskirk, Vick 1	*	640
Wise & Jackson, Calvin 8	8	633
Wootten & Reed, Vick 1	*	645

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HOWARD COUNTY—		
American-Maracaibo Co., Settles 1-D	600	2934
The California Co., Roberts 5, Lse. 2	45	1881
Cosden & Co., Inc., Roberts 4-C	30	1285
PECOS COUNTY—		
McMan O&G Co., Smith 5-C	500	1684
Mid-Kansas-Transcontinental, Yates 26-A	25,000	1465
Yates 1-B, (shallow)	*	38
Yates 2-B, (shallow)	205	36
Yates 3-B, (shallow)	*	36
Yates 4-B, (shallow)	25	28
Yates 5-B, (shallow)	*	29
Yates 7-B, (shallow)	70	52
Yates 9-B, (shallow)	*	45
Yates 10-B, (shallow)	50	23

PERMITS GRANTED FOR NEW WELLS

CALIFORNIA

COALINGA—Petroleum Securities Co., Gatchell 1, 20-20-16; Ladd 1, 28-20-16.

FRUITVALE—Mohawk Pet. Co., No. 4, 27-29-27.

LONG BEACH — Petroleum Securities Co., Bixby 1, 13-4-13. L. E. Bishop Oil Co., No. 1, 13-4-13. Marine Corp.-Apex Pet. Corp., No. 16-A, 19-4-12. A. T. Jergins' Trust No. 27, 19-4-12.

LOS ANGELES COUNTY—G. F. Beard, Brea Canyon Heights 1, 30-2-9. Mohawk Pet. Co., Towell 1-A, 29-3-14. Rucker, Smith, Croul No. 1, 27-2-10.

McKITTRICK—Ozean Oil Co., Kendon 2, 27-29-21.

MIDWAY—Standard Oil Co., No. 12, 5-32-34.

MONTEBELLO—Standard Oil Co., Monterey Park Land Co., 1, 3-2-12.

MT. POSO—Buttram Oil Co., No. 1, 24-27-28.

POTRERO—Midland Petroleum Co., Peterson 1, 33-2-14. Petroleum Securities Co., Parent 1, 28-2-14.

RICHFIELD — Continental Oil Co., Santa Fe 2, 33-3-9; Pyne 7-A, 33-3-9; Mondotte 1, 33-3-9.

ROSECRANS—Barnsdall Oil Co., Rosecrans 3-A, 20-3-13.

ROUND MOUNTAIN—Honolulu Cons. Oil Co., No. 1, 34-28-29. Shell Oil Co., Caldwell 1, 7-28-29.

SANTA FE SPRINGS—General Pet. Corp., Santa Fe Comm. 191-F, 6-3-11; Santa Fe 145-E, 5-3-11; Santa Fe 161-C, 5-3-11; Santa Fe 168-E, 5-3-11. Associated Oil Co., Dewenter 8, 5-3-11. General Pet. Corp., Santa Fe Comm. 178-C, 6-3-11; Santa Fe Comm. 186-K, 6-3-11; Santa Fe 137-D, 5-3-11.

SUNSET—North American Oil Cons., No. 1, 8-11-23. Signal Oil and Gas Co., No. 3, 8-11-23.

BELRIDGE—Berry Oil Co., No. 31, 30-28-21.

ELWOOD—Barnsdall Oil Co., Doty 5, 23-4-29.

HUNTINGTON BEACH—V. R. G. Wilbur, No. 1, 2-6-11.

KERN RIVER—G. C. M. O. Co., No. 25, 23-28-27. Pan American Petroleum Co., No. 15, 22-28-27; No. 29, 22-28-27.

SAN LUIS OBISPO COUNTY—N. S. Wilson No. 2, 34-31-15.

SUMMERLAND—American Oil Developers, Ltd., No. 1, 21-4-26.

TEMBLOR—J. H. Kennedy, No. 1, 5-29-20.

VENTURA—Bolsa Chica Oil Corp., Louis Hartman 5, 21-3-23.

TEXAS

ARCHER COUNTY — Pois & Johnson, Wichita Falls, L. F. Wilson, 5, 3, B 1016, Amer. Trib. sur, 150 ft from s and 165 ft from e li B 1016. W. B. Omohundro, Wichita Falls, L. W. McCrory, 5, 1, B 1197, Amer. Trib. sur, 150 ft from s and wlines B 1197.

ANDERSON COUNTY—Humble, Houston, J. C. Beard, 178, 1, Jno. Trimmer sur, 450 ft from n and w lines.

AUSTIN COUNTY—Humble, Houston, L. Stravoski, 31, 2, T. Bell sur, 705 ft from nw and 468 ft from ne line; A. A. Sanders, 3, W. C. White sur, 300 ft from sw and 344 ft from se line; A. Mueller, 2, W. S. White sur, 344 ft from ne and nw lines; R. Hardy, 5, Wm. Smeathers sur, 1517 ft from sw and 350 ft from se line.

BROWN COUNTY—Humble, Wichita Falls, A. W. Armstrong, 145, 18, J. Delgado sur, 500 ft of No. 17. American Maracaibo Co., Fort Worth, F. H. Cross, 25, 1, No. 623, R. Honeycutt sur, 150 ft from n and e lines. E. P. Campbell et al, Abilene, A. A. Turner, 80, 1, S 4, J. S. Guinn sur, 320 ft from n and 217 ft from w line. Humble, Wichita Falls, H. Byler, 80, 12, S 43, T&NO Ry. sur, 435 ft w of No. 6. Lloyd Oil Corp., Fort Worth, J. R. Collier, 190, 1A, S 139, W. A. Smith sur, 150 ft e of No. 3; L. J. Stanley, 292, 13, S 139, W. A. Smith sur, 300 ft e of No. 8.

BRAZORIA COUNTY—Texas Co., Houston, Arnold, 70, 24, J. H. Bell sur, 100 ft e and 100 ft n of No. 21.

BEXAR COUNTY—I. L. Dingman, San Antonio, G. Gembler, 432, 1, A. Manchaca sur, 2250 ft from n and 152 ft from e line.

BROOKS COUNTY—A. W. Dinn, Hebbronville, Salado, 160, 1, B 5, La Mestena sur, center of Blk 5.

BASTROP COUNTY—Atlantic, Dallas, A. Yost, 46, 6, A. Garcia sur, 300 ft e of No. 3. Trinity Drillers, Inc., San Antonio, A. Yost, 50, 4, A. Garcia sur, 300 ft e of No. 3.

CALLAHAN COUNTY—Moutray Oil Co., Abilene, P. G. Hatchett, 40, 16, S 24, D&D Asy. sur, 490 ft e and 150 ft from n line nw¼ sw¼; A. Hickman, 390, 43, S 149, BBB &C sur, 340 ft s and 183 ft e of No. 23. Ewmo Oil Corp., Abilene, W. T. Wheeler, 80, 5, S 25, D&D Asy. sur, 300 ft sw of No. 1. Texas Co., Wichita Falls, P. G. Hatchett, 40, 2C, S 24, D&D Asy. sur, 300 ft s of No. 1C sw¼ of ne¼. E. W. Ames, Cisco, M. L. Surles, 55, 1, S 3157, TE&L sur, 450 ft from E and 150 ft from s line. Moutray Oil Co., Abilene, P. G. Hatchett, 80, 9B, S 23, D&D Asy. sur, 300 ft s of No. 3B. Gibson & Johnson, Abilene, C. B. Snyder, 40, 5B, S 42, BBB&C sur, 450 ft from w and 150 ft from s line nw¼ of nw¼. Grassroots Oil Co., Fort Worth, J. S. Cornelly, 88, 3, S 181, B 44, C.C.S.L. sur, 500 ft from n and 150 ft from e line. Conway & Sullivan, Baird, P. G. Hatchett, 80, 1, S 30, D&D Asy. sur, 1320 ft from n and 450 ft from e li w½ of ne¼.

CALDWELL COUNTY—Shell Oil Co., Houston, G. W. New, 40, 5, J. Hinds sur, 150 ft from n and 450 ft from w line. Humble, Houston, J. R. Tiller, A 20, 4, J. Hinds sur, 150 ft from n and e lines; C. Smith B 30, 1, J. Hinds sur, 150 ft from s and w lines. Humble, Houston, M. B. Johnson, B 28, 2, J. Hinds sur, 206 ft from s and 550 ft from e line; F. Gray, B 28, 1, J. Hinds sur, 350 ft from e and e lines; M. Briscoe, 100, No. 3, J. Hinds sur, 150 ft from s and 576 ft from w line; M. Briscoe, 100, 4, J. Hinds sur, 150 ft from s and 876 ft from w line. United North & South Dev. Co., San Antonio, F. Blundell, 102, 1, R. B. Jarmon sur, 150 ft from n and 318 ft from e line. Magnolia, Dallas, H. M. Lochman, 226, 2, Guadalupe College sur, 150 ft from s and w lines.

COLEMAN COUNTY—Tom Bryant, Cross Plains, J. A. Baker, 47, 1, No. 83, J. Faxell sur, 150 ft from s and w lines. E. H. Stepp, Coleman, C. E. Shore, 80, 1, S 72, B 1, GH&H sur, 440 ft from n and 1010 ft from w li n½ of nw¼. Humphreys Bros., Inc., et al, Brownwood, C. M. Moseley, 80, 1, S 61, HT&B sur, 150 ft from n and e lines. Howard Samuell et al, Coleman, E. W. Grill, 80, 1, S 70, B 11, W. J. Cannon sur, 150 ft from n and w lines of B 11.

COMANCHE COUNTY—E. P. Weister, Box 790, Tulsa, Okla., Houser, 100, 29, S 56, D&D Asy. sur, ne corner.

COLORADO COUNTY—Rich Oil Corp., Houston, A. Rosenberg, 409, ¶, J. Hadden sur.

CLAY COUNTY—J. H. Clark, Wichita Falls, J. W. Culbertson, 20, 1, K. McKenzie sur, 150 ft from s and e lines. Saxet Oil Co., Petrolia, Fee C, 136, 21, L 40, B 10, CN&K sur, 150 ft from s and w lines of lot 40.

COOKE COUNTY—Texas Co., Wichita Falls, H. L. Dennis, 51, 9, T. J. Hutchinson sur, 300 ft e of No. 6. Shell Oil Co., Dallas, H. L. Dennis, 47, 4A, T. J. Hutchinson sur, 50 ft n of No. 4.

DUVAL COUNTY—Magnolia, Dallas, C. W. Hahl, 560, 7B, S 61, J. Poitevent sur, 500 ft n of No. 1. Robert Driscoll, Corpus Christi, Fee, 640, 15, S 448, 3778 ft from n and e 2330 ft from e line.

EASTLAND COUNTY—Arab Gasoline Corp., Eastland, J. Phillips, 120, 1, S 15, B 4, H&TC sur, 300 ft from w and 200 ft s li of nw¼. Thompson & McMillan, Eastland, W. H. Green, 35, 2, S 36, B 4, H&TC sur, 150 ft from n and w lines. Conway Bros. & Champion, Ranger, J. W. Simmons, 160, 2, B 27, McL. C. S. L. No. 2, 900 ft from n and 450 ft from w line.

ERATH COUNTY—McDonald & Campbell, Dallas, L. E. Blanton, 80, 1, S 14, Indianola Ry. sur, 330 ft from n and 660 ft from e li s½ nw¼.

FORT BEND COUNTY—Humble, Houston, A. W. Miller, 1, L. E. Cross sur, 1847 ft from sw and 1187 ft from se line; Sugarland Ind. 8, Wm. Stafford sur, 500 ft n of No. 5; C. C. Nelson, 3, Wm. Little sur, 2175 ft from w and 750 ft from n line. Sun Oil Co., Dallas, E. C. Farmer, 125, 7, J. Scott sur, 558 t w of No. 1. South Texas Pet. Co., Houston, C. Winkleman, 160, 1, S 25, H&TC sur, 510 ft from nw and 740 ft from sw line.

FALLS COUNTY—C. E. Groover, Waco, S. Allen, 59, 1, P. Zarza sur, 150 ft from s and 450 ft from e line.

FREESTONE COUNTY—Jno. W. Hooser, Dallas, J. Nussbaum, 80, 1, S. A. Sweet sur, 150 ft from s and e lines.

GRAY COUNTY—Cockrell-McIlroy Oil Co. & Shamrock Oil Co., Amarillo, R. S. McConnell, 80, 2, S 174, B 3, I&GN sur, 330 ft from n and w lines of w½ of sw¼; W. S. Clayton, 137, B1, S 50, B 25, H&GN sur, 150 ft from w and 730 ft from n line; W. S. Clayton, 60, 3, S 50, B 25, H&GN sur, 309 ft w of No. 2. C. N. Ochiltree et al. Pampa, A. Chapman, 80, 1, S 69, B 25, H&GN sur, 330 ft from s and w lines of s½ of ne¼. Washoma Pet. Co., Enid, Okla., R. E. Smith, 240, 2, S 149, B 3, I&GN sur, se cor of sw¼. British American O. & G. Co., Wichita Falls, Patton sur, 160, 1, S 61, B 32, H&GN sur, 330 ft from n and w lines. Phillips Pet. Corp., Bartlesville, Okla., J. S. Morse, 80, 1, S 68, B 25, H&GN sur, 990 ft from n and 319 ft from w li e½ of sw¼. Ana-Gray Oil Co., Amarillo, Chapman, 80, 2, S 9, B 26, 960 ft from n and 330 ft from e line of w½ of sw¼. Dye & Gillette, Tulsa, Okla., Noel, 80, 1, S 187, B 3, I&GN sur, 330 ft from s and e lines of e½ of ne¼.

HUTCHINSON COUNTY—Phillips Pet. Corp., Bartlesville, Okla., B. J. Ward, 80, 1, S 34, B Y, A&B sur, 400 ft from n and w lines of w½ of nw¼; W. Trigg, 162, 2, S 2, B OB, H. T. Trigg sur, 330 ft from s and w lines.

HARRIS COUNTY—Humble, Houston, O. P. Woodburn, 1, A. Whitlock sur, 1850 ft from

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending May 11	Previous week	Total this month	Total this year	This week Last Yr.	This month 1928	1928 year total
Arkansas	1	..	1	52	..	8	331
California	42	..	42	519	13	31	1,207
Louisiana	13	8	21	286	12	25	680
Kansas	49	15	64	347	10	36	1,032
Oklahoma	76	83	159	1,136	51	117	3,744
Texas	148	189	337	2,949	124	327	8,297
Total	329	295	624	5,289	210	544	15,291

n and 1320 ft from w line. Woods & Bennett, Humble, Collier 2, 2, Jas. Strange sur, 96 ft nw of No. 1. Moody Corp., Tulsa, Okla., M. Hume, 7, 4, No. 51, J. Hamilton sur, 50 ft from w and 1060 ft from s line; J. Calvert, 7, 2, No. 51, J. Hamilton sur, 50 ft from w and 1142 ft from s line.

HOWARD COUNTY—Moody Corp., Tulsa, Okla., D. Roberts, 240, E11, S 136, B 29, W& NW sur, 990 ft from n and 1650 ft from e line nw¼; E12, 990 ft from s and 1650 ft rom e line of ne¼.

IRION COUNTY—W. R. Andrews et al, Putnam F. Tankersley, 80, 2, S 26, 600 ft from n and 225 ft from w line. Signal Oil Co., of Texas, Tulsa, Okla., J. D. Sugg, 640, 2, S 23, B 27, H&TC sur, 5240 ft from n and 996 ft from w line.

JACK COUNTY—Harper Pet. Corp., Mineral Wells, J. M. Box, 40, 2, I. Hughson sur, 330 ft from s and w lines.

JIM HOGG COUNTY—E. St. Albans, Laredo, R .Holbein, 2, No. 3, B 2, Las Animas sur, 150 ft from n and e lines of Blk 2.

JEFFERSON COUNTY—Yount-Lee Oil Co., Beaumont, Gladys, 89, B 100, J. A. Veatch sur, 9 ft from w and 44 ft from n li of b 100.

KIMBLE COUNTY—J. B. Lindsay, Tonkawa, Okla., G. C. Andersen, 320, 1, S 167, B. Hubuiger sur, 1320 ft n and e lines of s 167.

LIBERTY COUNTY—Sun Oil Co., Beaumont, A. Mitchell, 100, 44, M. G. White sur, 205 ft n of No. 22. Pearce & Rogers, Liberty, E. B. Pickett, 5, 1, M. G. White sur, 50 ft from s and e lines.

MONTAGUE COUNTY—Bridwell Oil Co., Wichita Falls, E. E. Edmondson, 15, 1, T. R. Edmonson sur.

MENARD COUNTY—Duffy & Loofburrow, Wichita Falls, R. S. Winslow, 160, 1, S 32, H&TC sur, 1320 ft from s and e lines of se¼.

MARION COUNTY—Pettit Oil Corp., Trees, La., L. Rives, 221, 3, M. G. Nall sur, se corner.

MEDINA COUNTY—Zigzag Oil Co., San Antonio, Irrigation Farms, 112, 1, No. 9, C. Kemp sur, 350 ft from w and 1496 ft from s line.

NAVARRO COUNTY—Jack Wilder, Rice, J. B. Bradley, 50, 3, R. C. S. L. sur, 300 ft w of No. 1.

PECOS COUNTY—Gulf Prod. Co., Fort Worth, M. A. Smith, 640, 17, S 22, B 194, GC&SF sur, 54 ft from n and 2745 ft from w li sw¼; 18, 54 ft from n and 1376 ft from w line of sw¼. Cowboy Evans, Midland, Pecos Valley, 80, 1, S 36, B 3, H&TC sur, 660 ft from w and 1320 ft from s li w¼ of sw¼. Taylor-Link Oil Co., San Angelo, University, 80, 1, S 30, B 16, Univ. sur, 330 ft from s and w lines of w½ of sw¼.

PANOLA COUNTY—Natural Gas Prod. Co., Shreveport, La., Floyd, 114, 5, B. C. Jordan sur, sw corner.

PALO PINTO COUNTY—Brazos River Gas Co., Mineral Wells, J. H. Wester, 100, 2, J. Smith sur, 500 ft from w and 400 ft from n line.

REEVES COUNTY—Earl Hemby et al, Pecos, S. Brooks, 160, 1, S 16, B 59, School sur, 620 ft from n and 685 ft from w li s½ of n½.

STEPHENS COUNTY—Texas Pacific Coal — Oil Co., Ranger, S. A. Pearce, 160, 3, S 45, B 6, T&P sur, 1000 ft s of No. 2. Amerada Pet. Corp., Fort Worth, A. Dickie, 200 4, J. Kyle sur, 500 ft from n and 1300 ft from e line. R. G. Lawton et al, Ranger, J. T. McCleaskey, 160 1, S 75, B 6, T&P sur, 330 ft from w and 1650 ft from s line.

THOCKMORTON COUNTY—J. J. Garretson, Albany, W. McLemore, 640, 1, S 3, HT&B sur, 2000 ft from n and 180 ft from e li s 3. H. I. Stock, Cisco, M. V. Cummings, 48, 3, S 50, C. I. Ry. sur, 900 ft from n and 300 ft from e line. Conway Bros. & Woodson Oil Co., Ranger, J. G. Overcash, 80, 2, 960 TE&L sur, 300 ft n of No. 1 sw¼. Roeser & Pendleton, Inc. & Humble, Albany, R. M. Titus, 479, B1, N. Williams sur, 150 ft from n and 816 ft from e line; B2, 200 ft w of No. 1. J. A. Bearman, Cisco, Ledbetter, 80, 2, S 2, W. S. Riddle sur, 150 ft from nw and 505 ft from sw line.

VICTORIA COUNTY—Humble, Houston, A. J. Kohutek, 200, 1A, SA&MG No. 5 sur, 1945 ft from sw and 900 ft from nw line.

VAN ZANDT COUNTY—Pure Oil Co., Fort Worth, W. S. Brannon, 45, 1, J. Goodman sur, 150 ft from n and w lines.

WICHITA COUNTY—W. H. Hammond, Wichita Falls, T. F. Mitchell, 40, 8, J. T. Lewis sur, 300 ft s of No. 7. Louis Barclay, Wichita Falls, Kemp & Kempner, 1, S 40, W. V. F. L. sur, 1173 ft from w and 1223 ft from s line. Riner & Bailey, Wichita Falls, J. D. Michie, 25, 3, B. N. Ferguson sur, 150 ft from n and 195 ft from w line. Rubsam & Hunter et al, Wichita Falls, W. D. McClure, 40, 5, B 5, GC&SF sur, 150 ft nw of No. 1. E. P. Bowen, Wichita Falls, Fassett-Tuttle, 62, 1, M. Templeton sur, 150 ft from e and 750 ft from s line. Texas Co., Wichita Falls, Waggoner, B 66, 4, GC&SF sur 5, 150 ft from s and e line. Venmex Oil Co., Wichita Falls, J. & J. Waggoner, 219, 16, B 9, GC&SF sur, 200 ft from e and 150 ft from s line. J. H. S. Bonner et al, Wichita Falls, Cole, 153, 29, J. McCool sur, 50 ft n of No. 28. Panhandle Refg. Co., Wichita Falls, T. L. Burnett, 80, A4, S 6, G. P. Meade sur, 300 ft e of No. 1. W. H. Hammon, Wichita Falls, S. H. McCarty 40, 14, W. R. Eaves sur, 300 ft e of No. 12. W. C. Forbess, Fort Worth, M. M. Maywood, 148, 4, B 197, Waggoner Col. sur, 293 ft from e and 500 ft from s line. G. S. Dudley, Iowa Park, W. J. Logan, 40, 1, B 36, W. V. F. L. sur, 300 ft from w and 200 ft from s line. Harry Hines, Wichita Falls, T. L. Burnett, A 25, No. 4, G. R. Meade sur, 472 ft from n and 181 ft from e line. B. M. Griswold, Wichita Falls, B. F. Dutton, 40, 1, S 18, D. C. S. L. No. 4 sur, 750 ft from n and w lines.

WILBARGER COUNTY—J. E. Dunaway et al, Wichita Falls, W. T. Waggoner B 80, 2, S 25, B 4, H&TC sur, 410 ft of No. 1 sw¼ of sw¼. Empire, Wichita Falls, W. T. Waggoner, 160, 10B, S 32, B 4, H&TC sur, 589 ft from w and 870 ft from s line. R. R. Robertson, Wichita Falls, W. T. Waggoner, 40, 1, S 15, B 4, H&TC sur, 150 ft from s and w lines; W. T. Waggoner, 60, 1, S 50, B 2, H&TC sur, 150 ft from s and w lines. Staley-Wynne & Co., Wichita Falls, W. T. Waggoner, 80, O1, S 9, B 4, H&TC sur, 150 ft from n and w lines of s½ of sw¼; W. T. Waggoner, 80, F7, S 32, B 4, H&TC sur, 300 ft e of No. 5. Hemisphere Oil Corp., Pittsburgh, Penna., R. L. Castlebury, 250, 1, S ..7, B 14, H&TC sur, 150 ft from s and 3470 ft from w line. Phillips Pet. Corp., Bartlesville Okla., W. T. Waggoner, U 40, 3, S 44, B 4, H&TC sur, 300 ft from n and w lines ne¼ of nw¼; W. T. Waggoner S 40, 3, S 45, B 4, H&TC sur, 300 ft from n and w lines se¼ of sw¼. Roy I. Carpenter, Wichita Falls, W. T. Waggoner, 80, 2A, S 9, B 4, H&TC sur, 310 ft s of No. 1.

WHEELER COUNTY—Norther Texas Utilities Co., Wichita Falls, J. W. Gooch, 560, 1, S 81, B 23, H&GN sur, 335 ft from n and e lines of ne¼ of sw¼. Gibson Oil Corp., Amarillo, W. E. Bentley, 160, 7, S 42, B 24, H&GN sur, 330 ft from s and e line sof nw¼ of se¼.

WHARTON COUNTY — Cullen & West Prod. Co., Houston, Bay 31, 6, S 39, J. Hall sur, 105 ft from sw and 323 ft from se line.

WINKLER COUNTY — Dixie & Southern Crude Oil Purchasing Co., Fort Worth, I. Hendrick, 280, 3, S 21, B 26, 330 ft from e and 2310 ft from s line Sec. 21.

YOUNG COUNTY—A. W. Kay, Graham, J. E. Keen, 8, 2, 3401 TE&L sur, 500 ft n of No. 1. C. A. Pennell, Loving, R. J. Calvin, 25, 6, A. Rohus sur, 150 ft from n and w lines. Steed & Gaus, Wichita Falls, L. A. Snider, 400, 15, R. Wilson sur, 1925 ft from n and 2575 ft from w line of survey.

ZAPATA COUNTY—H. Muckleroy, Jr., Laredo, Y. Trevino, 80, 1, S 412, Blk 24, on line between Blk 24 and Blk 25. O. W. Killam, Laredo, R. Hinnant, 80, 4, S 74, SK&K sur, 800 ft from w and 150 ft from s line n½ of se¼. P. N. McCulloch, Laredo, P. Trevino, 160, 1, V. Redondo sur, se corner; 2, east of No. 1; 3, 300 ft w of No. 4; 4, 400 ft w of No. 5; 5, 400 ft w of No. 6; 6, 700 ft sw of No. 7; 7, 1500 ft from s and 150 ft from e line; 8, 300 ft ne of No. 5.

OKLAHOMA

BECKHAM COUNTY—Fred Coogan, Holmberg 1a, cel sw sw ne, 35-9n-25w.

CARTER COUNTY—Magnolia, Putman 2, ne sw, 30-1s-3w. H. L. Sturm, Fish 3, nw se nw, 35-3s-2w.

COTTON COUNTY—Bridwell et al, Crow 1, se sw sw, 24-1s-11w.

CREEK COUNTY—Flynn and Morgan et al, Wilson 1, sw se se se, 2-18-9e. J. Ray Stebbins, Fulsom 1, nw ne sw, 17-17-10e. C. E. Suppees et al, Keystone 1a, nw se se, 4-17-11e. C. H. McCready et al, Hardrigel, se nw se, 30-17-11e. C. G. Tibbens, Connesseny 41, sw nw sw ne, 30-15-9e. Texas, Harjo 1, ne nw, 35-14-9e.

HUGHES COUNTY—I. T. I. Oil Co., Godfrey 1, ne nw se, 6-8-9e. Amerada, Deere 1, nw sw, 4-8-9e.

KAY COUNTY—Harris and Haun, School Land 2, c ne ne, 36-28-1w.

KIOWA COUNTY—Alexander et al, Fuqua 3, se sw sw ne, (owdd) 18-5n-16w. Rymer et al , Weidel 1, c ne ne, 5-6n-16w.

MUSKOGEE COUNTY—J. M. Foltz, Taylor 2, (owdd), se se, 28-15-17e. Pure, Cherry 5 (owdd), se sw nw, 14-14-16e.

OKFUSKEE COUNTY—Champlin O. & R. Co., Jefferson 4, c nw nw, 23-11-11e. Superior Oil Company et al, Carolina 1, se, 6-11-7e. Mid Continent et al, McCoy 1, sw ne ne, 31-11-11e.

OKLAHOMA COUNTY—Wirt Franklin Pet. Corp., Lowery 2, c e½ w½ nw, 12-11-3w.

OKMULGEE COUNTY—L. C. Wheeler et al, Finerty 1, se, 31-16-12e.

OSAGE COUNTY—Lewis Prod. Co. et al, 4, ne se se, 15-26-6e. I. T. Oil Co., 406, nw se se nw, 30-25-8e; 407, se nw se, 18-25-12e. Peters Pet. Co., 3, cnl sw, 32-24-9e. McCune and Wormser, 2, c ne, 15-24-8e. Wrightman Pet. Corp., 1, ne sw, 32-22-8e. Pure, 4, se nw, 36-22-8e. Barnsdall et al, 3, sw ne se, 22-22-11e.

PAWNEE COUNTY—Gled Oil Company, 1, nw ne ne, 25-21-7e.

PONTOTOC COUNTY—Markham and Pugh, Wade 1, se nw, 1-4-7e. Homaokia Oil Co., Ritchey 4, nw ne se, 1-4-7e.

POTTAWATOMIE COUNTY—Tom Slick Oil Co., Welden 3, cwl se nw nw, 20-6-4e. Tom Slick Oil Company, Bledsoe 4, ne sw sw, 20-6-4e. Independent, Lynch 1, cel se nw nw, 20-6-4e. Texola Drilling Co., Townsite 1, nw ne nw, 19-4-4e. Simms Pet. Co., Laster 2, ne, 19-6-4e. Independent and Twin State, Gardner 1, ne sw se, 19-6-4e. Reynolds Royalty Company, Townsite 1, se sw sw se, 18-6-4e. Reserve Oil Co., Townsite 1, se, nw se, 18-6-4e. Hall and Briscoe, Townsite 1, se, sw se, 18-6-4e. Independent and Twin State, Newell 1, sw, se, 17-6-4e. Sinclair, Nadash 1, (owdd), ne sw nw, 29-7-5e. Darby Pet. Co., Nixon 1, sw, 9-7-4e. Phillips Pet. Co., Martin 2, se, ne, 2-7-4e. Martin and Erwin, Kelly 2, ne, 2-7-4e. Carter, Bodkin 1 ne se, 2-7-4e. Pure, Tolen 2, sw, nw, 1-7-4e. Independent, Borrows 2 nw, 1-7-4e. Gypsy, Kennedy 1, nw, sw, 1-7-4e. Superior, Jackson 1, sw, 36-8-4e. Amerada and Barnsdall, Wallace 4, sw se sw, 17-8-5e. Phillips and Fuhrman Pet. Co., Raper 1, sw, se, 33-8-5e. Prairie O. & G. Co. et al, Pugh 2, se sw se, 7-7-5e. Prairie et al, Bebee 1, nw se se, 19-6-4e.

SEMINOLE COUNTY—Harris et al, Miller 1, nw, ne, 8-8-8e. Magnolia, Coody 2, nw ne se, 18-9-7e. Sinclair, Coody 1, nw ne sw, 17-9-7e. Gypsy, Harjo 1, nw ne ne, 20-10-7e. Sinclair, Phillips 1, nw ne se, 5-7-7e. Gypsy, Payne 3, nw se ne, 5-7-7e. Twin State, et al, Anderson 1, se sw ne, 22-9-5e. J. S. Cosden, Barber 1, ne sw sw, 13-9-5e. Skelly, Prairie and Slick, Varnum 1, nw, 5-9-6e. Texas, Hotulke 5, (twin), se sw nw, 23-7-6e. Empire, Cluck 12, sw ne se, 11-8-5e; Cluck 11, nw se ne, 11-8-5e. Barnsdall, Johnson 1, se, 22-10-6e. Mid Continent, Eleck 3, (twin), nw ne se, 23-7-6e. Mid Continent, Smith 8, se sw ne, 5-7-7e. Carter, Cudjo 3, sw nw se, 23-7-6e. Barnsdall, Coker 9, nw sw sw, 11-8-5e. Barnsdall, Coker 9, nw sw sw, 11-8-5e. Gypsy, Cotcha 4, ne nw sw, 23-7-6e.

WAGONER COUNTY—Wright and Kunkel, Oliver 2, csl nw sw, 3-16-15e.

KANSAS

BARBER COUNTY—J. B. Robertson et al, Powell 1, c se se 11-32-10w. Barbara Oil Company, Angel 1, c nw ne 14-33-13w.

BUTLER COUNTY—Connell and Slick, Zeist 1, sw ne nw 14-27-5e. Crawford et al, Thompson 1, nw sw 2-24-3e. Lilly and Schreck, Barrett 1, ne nw nw, 17-25-7e; Patten et al, Marshall 2, sw se sw, 11-27-5e; H. B. Garden, Morgan 1, se sw, 13-27-5e.

COWLEY COUNTY—Independent and Vickers Pet. Co., Youle 2, se ne ne, 16-32-4e. Kentucky Nitrogen and Oxygen Co., Radcliffe 1, c sw sw, r-33-7e.

ELK COUNTY—Hood and Frazier, Logsden 1, c se se, 25-30-9e. Denton and Morrow, Lovett 1, sw ne nw, 15-31-10e.

GREENWOOD COUNTY—Phillips, McCray

Three stages in the preparation of a valve for Gould hot oil pump.

Left—Undercut. *Center*—Stellite applied. *Right*—Finish ground ready to use.

Stellited Hot Oil Valves Last *Six Times* as Long

AT the Crew Levick Company's Pettys Island refinery oil passes through Gould's Hot Oil Pumps at 850 deg. F. These pumps are equipped with three inch ball valves, which open and close an estimated 1,200,000 times per month. Stellited valves for these pumps average a full year's continuous run. Special steel valves formerly used ran two months at the best.

The longevity of Haynes Stellite under this severe service, its stubborn resistance to wear, is easily explained by the inherent properties of the metal. Haynes Stellite is red hard. It is unaffected by temperature up to 1800 deg. F. It is tougher at red heat than when cold. At any temperature it resists wear better than any other metal.

Throughout industry, operators are taking advantage of Haynes Stellite to add three to five and more times longer life to wearing parts. The Haynes Stellite representative will gladly show you where and how to use it. Ask him to call.

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Unit of Union Carbide UCC *and Carbon Corporation*

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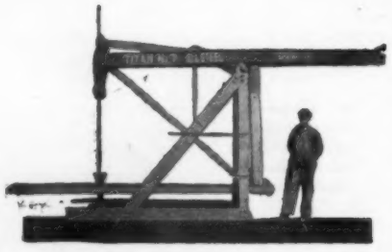

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McPHERSON COUNTY—McPherson O. & G. Dev. Co., Chinberg 1, c nw nw, 18-19-2w.

MORRIS COUNTY—General Utilities Company, Midcaff 1, sw se ne, 15-16-7e.

OSBORNE COUNTY—Mid Kansas, Boyce 1, se nw, 18-6-13w.

SEDGWICK COUNTY—Marland, Block 1, sw se nw, 16-25-1e. Barnsdall, Samuels 1, (owdd) ne nw, 24-25-1e. Alladin Pet. Co., Benningfield 2, sw nw sw, 6-26-1e. Bu Vi Bar et al, Bright "B" 3, sw ne sw sw, 6-26-1e; Bright "B" 4, nw se sw sw, 6-26-1e. Derby, Gorman 4, nw sw nw sw, 6-26-1e. Robertson et al, Creasson 1, nw sw sw sw, 6-26-1e. Shell Fischer 1, ne se, 15-26-2e. Bu Vi Bar, Carr 2, nw ne se, 1-26-1w; Carr 3, se ne se, 1-26-1w; Carr 4, ne nw se, 1-26-1w. Davis, Skelly et al, Wilson 7, sw se ne, 1-26-1w. Wentz 1, se ne nw, 1-26-1w. Bu Vi Bar et al, Lantz 2, se, 12-26-1w. George P. Dickey et al, Nolan 1, se ne, 20-28-1e. White Eagle, Robbins 1, ne se, 20-28-1e. Hartman and Skaer et al, Campbell 1, nw sw se, 21-28-1e. Shell, Nolan 1, sw nw, 21-28-1e. Smith and Ashe, Van Arsdale 1, ne, 29-28-1e. Johnson and Marshall, Roy 1, ne se sw, 23-29-1e.

SUMNER COUNTY—Champlin O. & R. Co., Latta "B" 4, (owdd), nw se nw, 9-30-2w. Champlin, Love 1, (owdd), nw ne sw, 9-30-2w. Gypsy Oil Co. and Blankenship Pet. Co., Boberk 1, c sw nw, 27-34-4w.

WOODSON COUNTY—Skelly Central, Trust Company 1, ne se, 17-24-14e.

ARKANSAS

OUACHITA COUNTY—Ark. Drilling Co., El Dorado, Ark., G. E. Crowley 1, 275 ft s and 275 ft w ne c se ne 27-15-18.

LOUISIANA

ACADIA PARISH—Reliable Oil Co., Inc., Crowley, Jennings-Heywood 2, 46-9s-2w, 50 ft n and 50 ft w of se c of Lot 5 in Blk. 12 of Sec. 46.

CADDO PARISH—Gulf Refg. Co. of La., Shreveport, Pope W. Oden 1, 18-19n-14w, 220 ft w and 330 ft s of ne c. Gulf Refg. Co. of La., Shreveport, Pope W. Oden 2, 18-19n-14w, 990 ft s and 330 ft w of ne c. Ohio Oil Co., Shreveport, S. S. Hunter Est, Inc. 1, 17-19n-14w, 330 ft s and 276 ft e of nw c ne nw. Ohio Oil Co., Shreveport, S. S. Hunter Est. Inc. 2, 17-19n-14w, 330 ft n and 330 ft e of sw c ne nw. Standard Oil Co. of La., Shreveport, W. K. Henderson 1, 7-19n-14w, 330 ft n and 330 ft w of se s; Est. of S. S. Hunter 2, 8-19n-14w, 330 ft n and 270 ft e of sw s se sw; Est. of S. S. Hunter 3, 17-19n-14w, 330 ft s and 330 ft e of nw c se nw; Est. of S. S. Hunter 4, 17-19n-14w, 1320 ft s and 330 ft e of nw c of section; P. W. & P. D. Oden 1, 18-19n-14w, 330 ft s and 330 ft w of ne c se ne.

DE SOTO PARISH—P. J. Becker, Tr., Shreveport, G. W. Tull 2, 23-12n-15w, 144 ft n and 100 ft w of se c ne ne.

RICHLAND PARISH — International Gas Prod. Inc., Monroe, Mrs. Kate Humble 1, (amended permit), 35-16n-6e, 2201 ft s and 1033 ft e of nw s. Palmer Corp. of La., Shreveport, A. P. Miles 1, 11-17n-6e, 1320 ft s and 660 ft e of nw c ne.

UNION PARISH—Natural Gas Prod. Co., Bastrop, Josephine Hollis 1, 14-21n-3e, 1980 ft s and 660 ft w of center.

Herman P. Taubman, president of the Taubman Supply Corporation of Tulsa, is on a business tour of industrial and manufacturing centers in the North and East visiting in Chicago, New York, Pittsburgh, St. Louis and other cities en route home.

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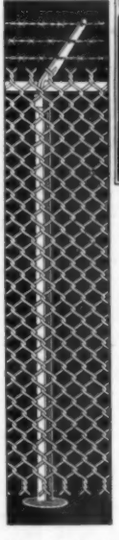

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WILDCATS FROM ALL SECTIONS

NORTHERN CALIFORNIA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
HUENEME—		
The Texas Co.'s Eastwood 1.....	*	2670
SANTA BARBARA—		
Bankline Oil Co.'s Dundan Ranch 1	*	4290

KERN COUNTY—

BENA—Elmer Oil Co.'s 1, 15-30-30, dr shale 1750 ft.

BUTTONWILLOW—Richfield's Redding 1, 36-27-23, dr shale 5435 ft.

GOULD HILLS—Elmer Oil Co.'s 1, 2-29-20, heavy oil sand 2140 ft. J. H. Kennedy's 1, 5-29-21, new lcn. Ozena Oil Co.'s 1, 27-29-21, new lcn.

KERN RIVER—Gatton and Gould's 1, will deepen from 1185 ft. Richfield's Boston 1, 20-28-28, dr 3788 ft.

LERDO — Shell's An-1, 5-29-27, dr shale 3333 ft.

McFARLAND—General Petroleum's KCL-1, 25-26-25, dr hard sand 2750 ft.

McKITTRICK—The Texas Co.'s Aldridge 1, 4-30-22, testing for gas showings 5015 ft. Ventura-Pacific Oil Co.'s 1, 18-29-22, deepening from 3375 ft.

ROSEDALE—Elmer Oil Co.'s 1, 33-29-26, iron cmt on bottom, td 2575 ft.

SHALE HILLS—Day Oil Co.'s 1-A, 1-27-18, dr 200 ft. William Gilbert's 1, 35-26-18, deepening from 750 ft.

SAN EMIDIO—Union's KCL-2, 5-10-21, dr 2925 ft.

UNION AVENUE—Taft Well Drilling Co.'s Matley 1, 2-30-27, lcn.

TEMBLOR HILLS — George F. Getty's Phelps 1, 29-31-22, dr shale 1233 ft. Union's W. P. 1, 27-32-23, dr shale 4677 ft.

SANTA BARBARA COUNTY

BUELL CANYON—Union's Buell 1, rigging up rotary.

CARPENTERIA—Continental's Bailard 1, dr shale 1000 ft.

GOLETA—F. G. Anderson's Langham 1, will deepen from 3415 ft. Elwood Cons. Oil Co.'s Rekar 1, 8-3-29, swabbing water on test, td 3430 ft. General Petroleum's More 1, 21-4-28, dr shale 2550 ft. J. F. Nugent's P. T. 1, rig. 4-27, flowed gas, td 2440 ft, now sd. Padre Olympic Oil and Refining Co.'s Palisades 1, 29-Oil Co.'s Dos Pueblos 1, 8-4-29, dr shale 2690 ft. Petroleum Securities' Bishop 1, rigged up.

LOMPOC—Standard's Schyvers 1, dr hard rock 2400 ft.

ORELLA — Shell's Rutherford 1, 36-5-31, 11¾-inch cas cmt 3360 ft, td 3400 ft.

POINT CONCEPCION — Standard's Gerber 1, dr brown shale 2323 ft. Western Gulf Oil Co.'s Hollister 1, dr sand and shale 200 ft.

SANTA BARBARA — Pacific Western Oil Co.'s Wiley Ranch 1, new lcn.

SANTA MARIA—Keystone Oil Corp.'s P-1, 33-10-34, new lcn, rig completed. Shell's Union Sugar A-2, coring 2172 ft. System Oil Co.'s Bradley 1, 36-10-34, fsh for dr pipe 1560 ft.

SUMMERLAND—George F. Getty's Becker 1, 22-4-26, dr shale 4150 ft. Lincoln Drilling Co.'s Williams 1, new lcn. Shell's Ralph 1, bldg rig.

SURF—Keystone Pet. Co.'s True Ranch 1, new lcn.

VENTURA COUNTY

CONEJO—Triunfo Oil Co.'s 1, 21-4-19, dr gray sand 1240 ft.

FILLMORE—Federal Oil Co.'s Elkins 1, 5-3-19, pumping oil and water 3385 ft.

MUD CREEK—Superior Oil Co.'s Kirtlan 1, 14-4-21, rigging up cable outfit.

PIRU—Bolsa Chica Oil Corp.'s Snow 1, 4-4-18, rigging up new equipment. Pacific Western Oil Co.'s Tehmescal 5, co 3600 ft.

RED MOUNTAIN—Miley Oil Co.'s Casitas 2-A, 7-3-23, dr hard sand 1200 ft; Oakgrove 1, 11-3-24, bldg roads.

SANTA PAULA—W. W. Bryant's Anlauf 3, 21-4-21, dr shale 1116 ft. Empire Oil Co.'s 4, 13-4-21, 12½-inch casing cmt 300 ft. San Pedro-Pt. Fermin Synd.'s Kellerman 1, 13-4-21, dr sand 776 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

SATICOY—Standard's Citrus 5, 10-2-22, dr hard brown shale 6103 ft.

SIMI—Shell's Marr 1, 31-3-17, sd 2825 ft.

VENTURA — California-Ventura Oil Co.'s Lacrosse 1, dr shale 722 ft. Federal Oil Co.'s Sexton 1, dr sandy shale 1969 ft.

FRESNO COUNTY—Currency Pet. Co.'s 1, 28-21-14, 8¼-inch cas cmt 1920 ft. Hornaday and Huggins' 1, 32-14-28, dr shale 3822 ft. Petroleum Securities' Gatchell 1, 20-20-16, new lcn; Ladd 1, 28-20-16, new lcn. Section 30 Oil Co.'s 1, 30-19-15, dr sandy shale 640 ft. Thomas Pet. Co.'s 1, 33-22-17, ur 410 ft.

KINGS COUNTY—Dudley Ridge Synd.'s 1, 12-23-19, blew in making 30 mil ft gas, td 1305 ft.

MONTEREY COUNTY — Marland's Naciemento 1, 32-24-11, dr hard sand 5152 ft. Shell's Dudley 1, 15-22-9, dr 235 0ft. Union's Paige 1, 8-22-8, bldg rig. T. H. Purman's 1, 12-32-22, fsh for core barrel 2600 ft.

SAN LUIS OBISPO COUNTY — Painted Hills Oil Co.'s Pecho 1, 34-30-10, co 2000 ft. Panorama Oil Co.'s 1, 7-31-21, dr shale 3768 ft. Paso Robles Synd.'s 1, 27-27-11, dr 200 ft. Texas Coal and Oil Co.s Dutton 1, 25-32-14, re-dr 700 ft. Union's Russ 1, dr brown shale 3548 ft; Chandler 1, dr hard brown shale 3528 ft.

TULARE COUNTY—Big Four Drilling Co.'s 1, 29-23-27, dr on iron 4330 ft.

SOUTHERN CALIFORNIA

CALABASAS—Pugh-Miller Drilling Co.'s 1, 6-1s-17w, dr brown shale 1922 ft.

FULLERTON — Shell's Stern 1-1, making pump test, td 6910 ft; Bastanshury 1, spudded.

HAWTHORNE—Standard's Freeman 1, 5-3-14, dr shale 4017 ft.

INGLEWOOD-POTRERO—California Eastern Oil Co.'s Pollard 1, will test again, td 4520 ft. Midlan Oil Co.'s 1, 18-inch cas cmt 1005 ft, td 1050 ft. Para-Cal Oil Co.'s 1, rig completed. Petroleum Securities' Parent 1, ready to spud. Max Pray's 1, sr 3800 ft.

NEWHALL—P. B. Anderson's 1, 1-3-16, rigging up cable tools.

NEWPORT—Mesa Pet. Corp.'s B. A. 1, 16-6-10, dr gray sand 4220 ft.

PIRU—Coastline Oil Co.'s Mazie 1, 21-5-27, sd 375 ft.

POMONA—Pomona Oil Assn.'s 1, 32-1-18, dr 1075 ft.

PUENTE—Brea-Canyon Oil Co.'s Bierd 1, 30-2-9, rigging rotary. R. C. Rucker's Grazide 1, 27-2-10, rigging rotary. Richfield's Didier 1, sd 4490 ft.

REDONDO—Allied Pet. Corp.'s Lincoln 1, 28-3-14, dr shale 4005 ft. Petroleum Securities' Schwuchow 1, 32-3-14, dr oil sand and shale 4975 ft.

RICHFIELD — Western Drilling and Prod. Co.'s Day 1, dr shale 2835 ft.

ROSECRANS — Burlingame Pet. Corp.'s Hamm 1, dr shale 1530 ft.

VENICE—Ohio Oil Co.'s Del Rey Water 1, dr shale 5333 ft.

RIVERSIDE COUNTY—Hemet Pet. Co.'s Ward 1, trying for water shutoff, td 3230 fgt. Trabuco Oil Co.'s 1, dr gray sand 3750 ft.

IMPERIAL COUNTY—Imperial Valley Pet. Co.'s 1, dr shale 2877 ft.

SAN BERNARDINO COUNTY — Western Pacific Oil Co.'s 3, swabbing on prod. test.

SAN DIEGO—S. S. Turner's Baler 1, dr shale 1863 ft.

MISSISSIPPI

MONROE COUNTY (Amory Distriot)—Amory Pet. Co.'s Hall 1, 8-13-17, dr white sand 3015 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, fsh cas, td 2500 ft. Amory Nat. Gas Co.'s Carter 1, dr sandy shale 2100 ft. Ark. Nat. Gas Corp.'s Rye 1, 22-15-17, arr set cas 3250 ft. Park Bowser et al's Cowart 1, 2-12-9, driving surface pipe, td 350 ft, (all five tests being drilled by P. J. McAlpine, contractor).

LAUDERDALE COUNTY (Meridian)—Meridian Nat. Gas Co.'s Mattie Houser 1, 33-8-18, sd gummy chalk, 1300 ft. Lauderdale O. & G. Co.'s Lackey 1, 2-7-16, waiting on rig.

RANKIN COUNTY (Jackson District)—Lion O. & R. Co.'s Misterfeldt 1, 2-4-1, dr hard rock 3064 ft. (Ohio Oil Co., Ark. Nat. Gas Corp., and Carter et al drilling test jointly with Lion).

HINDS COUNTY (Jackson District)—Mrs. Ella Rawls Reeder's State Land 1, 25-6-1, sd 2678 ft.

CLAIBORNE COUNTY—Ben White's Old Hen 1, 36-10-4, fsh 197 0ft.

LINCOLN COUNTY (Brookhaven)—Miss. Land & Oil Co.'s Pete Case 1, 21-8-6, sd 30 ft.

ALABAMA

CHOCTAW COUNTY — Robinson-Greer's Long-Bell Lbr. Co. 1, 28-10-4, dr black shale 3744 ft.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1, ur 535 ft. Hobson Bros.' 1, 9-8-2, arr set 8-inch cas 312 ft, td 320 ft.

KANSAS

BARBER COUNTY—Barbara Oil Co.'s Angel 1, c nw ne, 14-33-13w, rig. Rolands et al's Pickens 1, ne nw ne, 27-30-14w, dr 4605 ft. Allison & Fitzwilliams' Morrise 1, c nw se se, 9-30-12w, dr 2480 ft. Robertson et al's Powell 1, c se se 11-32-10w, rog.

BUTLER COUNTY—Smith & Ash, Donnelly 1, nec 8-24-6e, sd 2215 ft. Phillips & Shell, McClellen 1, se sw 23-26-6, dr 970 ft. Aladdin's Bronsenger 1, ne se 24-27-3e, ru. Shell's Thiesstein 1, c se sw se 10-24-3e, dr 2237 ft. Crawford et al's Thompson 1, nw sw 2-24-3e, ru.

COWLEY COUNTY — Marland's Hiatt 1, sw ne 8-31-6e, dr 1450 ft. Wakefield & Osborne's Osborne 1, nw ne 18-30-3e. J. B. Markey's Tatum 1, se sw 11-31-6e, sd 500 ft.

DICKINSON COUNTY — T. C. Johnson's Detweiler 1, swc ne nw 32-16-4e, dr 1950 ft.

EDWARDS COUNTY — Amerada-Wilcox, Teansil 1, nw cor 32-25-19w, dr 5045 ft.

ELLIS COUNTY—Rush Oil Co.'s Gatewood 1, nw 4-15-20w, cmtg pipe 1600 ft. Finney & Weimer, Freeman 1, nw se se 24-15-20w, spudded and sd. Brown's Gestner 1, nw se nw, 13-13-18w, sd 1350 ft. Atlantic's Wagner 1, c se se 35-15-16w, dry and abn. Phillips' Schmeidler 1 nw cor 20-12-17w, sd swbd 108 bbls 8 hrs. T. C. Johnson's Robbins 1, sw nw 15-14-16w, ru 15-inch csg, td 1040 ft. Phillips' Johnson 1, sw ne 9-13-19w, dr 2975 ft. Phillips' Dechant 1, ne se 12-13-16w, ur 8-inch csg 2810 ft. Burger's Hadley 1, c sw sw nw 20-11-17w, spudded and sd.

GEARY COUNTY—Wright et al's Younkers 1, nwc ne 17-11-5e, sd 2150 ft.

GRAHAM COUNTY—Gulf Coast's Johnson 1, swc se 27-8-15w, sd 2450 ft.

HARPER COUNTY—Amerada's Mendiville 1, c se se 24-34-6w, dr 4990 ft.

HARVEY COUNTY — Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-33-1w, dr 2130 ft. Helmerick & Payne, Lindamood 1, c sw ne sw 2-22-1e, dr 3385 ft hfw. Empire's Tangeman 1,

c sw ne ne 19-22-1e, dr 3511 ft. Hartman & Skaer, Seaman 1, cnw ne se 26-24-1e, ur 8-inch csg 3005 ft. Roth & Fauret's Bombrowsky 1, nwc 26-22-1e, sd 700 ft. Jolly & Ogg's Randall 1, nec 11-24-1w, dr 3250 ft. Patton et al's Buning 1, cse sw ne 18-24-1e, dr 2265 ft. Jolly & Ogg's Hupp 1, se ne 22-23-1w, dr 2095 ft. Fisher & Lauck, Regier 1, nw ne 17-23-2e, fsh 2958 ft. Rosenthal et al's Ingalls 1, c nw sw 24-33-3w, sd 3160 ft. Prairie, Slick & Connell Oil's Gatz 1, nw se 30-22-1e, fsh 1945 ft. Gypsy & Blankenship's Roebeck 1, c sw nw 27-24-4e. Independent & Reserve's Moulds 1, c ne 7-24-1w, dr 180 ft. McCulloch's Prouty 1, nw sw 3-23-1w, ru.

JACKSON COUNTY — Garvin & Morton's Lutes 1, sw nw nw 27-7-15e, td 2510 ft, dry and abn.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

KINGMAN COUNTY—Gypsy's Kincaid 1, ne nw 18-29-5w, rig.

KIOWA COUNTY — Wilcox O&G Co.'s Woodward 1, nec 35-27-17w, dr 2162 ft.

LANE COUNTY — Blankenship Pet. Co.'s Shaeffer 1, nec ne 24-16-28w, spudded and sd. Robinson et al's Dickerson 1, nec ne 11-12-27w, cmtg 8-inch csg 2625 ft.

MARION COUNTY — Connell & Prairie's Zirak 1, se sw 3-18-3e, dr 2340 ft. Meyer's Papp 1, sw ne 10-18-2e, sd 2755 ft. Hartman & Skaer & White Eagle's Kline 1, ne nw 28-18-3e, set 6-inch 2660 ft. General Utilities Propp 1, c ne se sw 8-19-4e, rig. Hanna's Pankratz 1, ne ne sw 13-20-3e, rig. General Utilities Burkholder 1, csl n½ se 8-19-3e, rng 8-inch csg 2391 ft. Moore et al's Miller 1, nec 26-19-1e, dr 2155 ft. Empire's Scully 1, c sw ne ne 28-19-2e, dr 1860 ft.

MARSHALL COUNTY—Irwin et al's Cooper 1, ne nw 10-3-7e, dr 1320 ft.

MORRIS COUNTY—Hiatt et al's Blythe 1, nw ne 35-15-5e, dr 1750 ft.

McPHERSON COUNTY—McPherson County Gas Co.'s Rasmussen 1, swc 8-18-3w, spudded and sd. Ted Washabaugh's Vosshell 1, ne ne 6-21-3w, fsh 3202 ft, spray oil. Helmerich & Payne's Rusen 1, c ne se sw 23-21-2w, dr 1375 ft. Tatlock et al's Meyer 1, c sw sw ne 32-20-1w, dr 1520 ft. McPherson's Reitz 1, nw se sw 1-20-2w, dr 1547 ft. McPherson's Chindberg 1, c nw nw 18-19-2w, loc.

NESS COUNTY—Barnsdall's Lauck 1, c sw 35-18-21w, dr 3978 ft.

OTTAWA COUNTY—Anderson et al's Bank 1, ne nw 29-10-2w, sd 3610 ft.

OSBORNE COUNTY — Trees' Payenter 1, c ne se se 22-6-15w, sd 650 ft. Jarvis' Jellison 1, sec 13-10-15w, dr 3200 ft. Empire's Crest 1, se ne 30-9-14w. Mid-Kansas's Boyce 1, se nw 8-6-13w, spudded.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, sd 1560 ft.

PRATT COUNTY—Jones & O'Haver, Lunt 1, csw nw 15-28-14w, sd 840 ft.

PHILLIPS COUNTY—Watsonian Oil Co.'s Marklein 1, ne sw 21-3-19w, dr 4040 ft. Watsonian & British American's Weiman 1, c sw sw 34-2-19w, sd 1847 ft.

RENO COUNTY—Perry et al's Oswald 1, ne ne se 30-22-5w, dr 2790 ft. Austin Drlg. Co.'s Strickey 1, swc nw 12-26-5w, dr 2550 ft.

RICE COUNTY — Allison & Fitzwilliams' Poland 1, ne sw ne 36-19-8w, cellar. Higgins & Steinbuble, Shurr 1, ne sw 21-20-10w, ur 10-inch csg 1900 ft.

RILEY COUNTY—Grey et al's Smith 1, ne se 30-6-6e, dr 945 ft. Derby-Skow Bros.' Lundstrum 1, ne 32-7-5e, machine.

ROOKS COUNTY—Krueger et al's Steis 1, c nw se sw 12-9-16w, spudded and sd. Burford & Brimm's Toxa 1, ne sw se 22-9-17w, spudded and sd. Prairie's Gick 1, c se 22-9-18w, dr 3150 ft.

RUSH COUNTY—Danciger O&R Co.'s Pinonka 1, c ne sw ne 17-19-17w, dr 2595 ft. Central Commercial's Brock 1, nec sw sw 12-17-16w, spudded and sd. Phillips Legleiter 1, c ne nw se 10-16-18w, dr 3620 ft. Barnsdall's Brock 1, c se se 21-17-17w, dr 1175 ft. Dancigers Swindt 1, c sw se sw 22-17-17w, set 12½-inch csg 1170 ft. Wilcox O&G Co.'s Schwartz Roph 1, c ne nw sw 27-17-17w, dr 2485 ft. Sinclair's Seur 1, c se nw nw 8-18-17w, dr 500 ft.

RUSSELL COUNTY — Prairie-Slick's Sellans 1, sw ne 36-15-13w, dr 2100 ft. Phillips' Solback 1, se nw 32-12-14w, dr 500 ft. Gobel & Bending's Bartlett 1, c sw sw 28-17-15w, spudded. T. C. Johnson's Robbins 1, sw nw 15-14-16w, ru 1040 ft. Alilson & Fitzwilliams' Mahoney 1, nw se 5-14-12w, dr 488 ft.

SALINE COUNTY—M. Esty et al's Peterson 1, c ne 6-16-5w, spudded and sd. Nathan-Jones et al's Robertson 1, n wsw 27-14-2w, td 3346 ft. Kenning-Coastal Co.'s Beal 1, c 23-14-5w, dr 2650 ft. Boyle et al's Miller 1, swc se 21-16-1w, sd 2615 ft. Kenning-Coastal's Hughes 1, c w ne nw 20-13-4w, spudded and sd. Dixie's Muir 1, c sw se sw 6-15-2w, dr 1260 ft.

SEDGWICK COUNTY—Magnolia's Wise 1, nwc 36-22-1w dr 3110 ft. Producers Oil Co.'s Jones 1, c sw ne se 31-26-2e, rung 6-in csg 2685 ft. Hawkins' Murfie 1, c sw 4-25-1w, dr 1350 ft. Hartman & Skaer & Carter's Hitchinson 1, c se se sw 23-28-2w, dr 3285 ft. Morgan & Tilley's Fitzgerald 1, nw ne 5-26-1w, sd 800 ft. Prairie & Slick's Rosenhagen 1, c sw se ne 33-27-4w, dr 2545 ft. Blankenship & Washoma's Tuttle 1, sw nw 1-27-1e, dr 2705 ft. Cannell Oil Co.'s Gross 1, ne cor 27-25-1w, pumping 12 bbls. Kroder et al's Harden 1, sw nw sw 20-26-1e, sd 1100 ft. Morgan et al's Corn 1, sw ne 28-25-1w, dr 3320 ft. Jones & Kirk's Sheppard 1, c se ne 4-25-1e, dr 3165 ft. Kyser et al's Stroot 1, sw nw 28-26-1w, dr 3989 ft. Lario & Blair's Tjaden 1, c ne se 22-29-2w, dr 3225 ft. Maglason's Buckles 1, nw se 3-28-1, sd 250 ft. Miller & Wentz's Shaeffer 1, nw ne 9-27-2w, sd 2100 ft. Lewis et al's Taylor 1, nw ne 23-27-2e, sd 3202 ft. Washabaugh's Harrison 1, c nw ne ne 3-26-2w, sd 350 ft. Hammond & Stout's Roeder 1, sw nw 23-27-2w, dr 515 ft. Johnson & Marshall's Roy 1, c ne se sw 23-29-1w, rig. Connell — Slick's Mahannah 1, c ne se se 3-25-1w, dr 2585 ft. Empire's Henderson 1, swc 35-25-4w, dr 2105 ft. Sullivan et al's Shelly 1, c nw ne se 32-29-2e, dr 2925 ft. Shawnee Oil Co.'s Newman 1, c se sw nw 5-26-2e, dr 1140 ft. Reynolds & Rogers' Updegraft 1, c se sw se 26-25-1w, rig. Twist et al's Armstrong 1, ne nw 28-26-1e, spd and sd. Patton & Wentz's Swanson 1, nw ne 8-26-2e, sd hfo 3005-10 ft. Twist et al's Joseph 1, 4-25-1w, dr 1650 ft. Tatlock et al's Cook 1, swc 25-28-2e, sd 3287 ft. LaFont et al's Carlton Bros. 1, c se se sw 24-28-1e, sd 870 ft. Frank Wehn's Wilson 1, c ne nw se 9-26-1w, rig. Shell's Lygrisse 1, se ne 15-26-2e, 1600 bbls daily 3163-73 ft. Shawver et al's Scott 1, c se sw sw 10-28-1e, spudded. White Eagle's Robbins 1, ne se 20-28-1e, spudded. Burnett's Davidson 1, c nw nw sw 27-26-1e, spudded and sd.

SHERMAN COUNTY—A. L. Henson et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

SMITH COUNTY—Mid Kansas' Lambert 1, nec 4-2s-13w, fsg 3565 ft.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1310 ft. Trees Oil Co.'s Gandy 1, sw ne sw 3-35-38w, moving in rotary.

SUMNER COUNTY—Gypsy's Williams 1, nw se sw 16-35-3w, pinched to 375 bbls. Davidson et al's Strickland 1, sw se 12-35-1w, rig. Mailand's Curry 1, nw sw 26-34-2e, dr 2535 ft. Gypsy & Blankenship's Robeck 1, c sw nw 27-34-4w, rig

TREGO COUNTY—Central Commercial Oil Co.'s Ellis 1, ne sw ne 20-13-21w, sd 3955 ft.

WASHINGTON COUNTY—McCool & Vincent's Linn 1, nw ne 27-4-3e, ru.

ARKANSAS

Completions

ASHLEY COUNTY—		
J. C. Marcum, DeYambert 1, 5-19-4e (formerly erroneously carried in Union County, Ark.)	*	3312
OUACHITA COUNTY—		
Chas. McDonald, Wilson B-2, 25-15-18	*	2906
UNION COUNTY—		
J. W. Olvey, Cottrell 1, 22-19-17	*	3503
DALLAS COUNTY—		
Robt. H. Dedman, Hillman 1, 20-10-13	*	1145

ASHLEY COUNTY—Atlantic O. P. Co.'s Bledsoe 1, 20-15-7, fsh ds 2760 ft. J. C. Marcum's DeYambert 1, 5-19-4e, junked, abn, td 3312 ft, (formerly erroneously carried in Union County).

BRADLEY COUNTY—Ohio Oil Co.'s Sou. Lbr. Co. 2, 19-16-9, coring 3300 ft. Phillips Pet. Co. et al's J. W. Kline 1, 28-16-12, bldg dk moving in rig.

CALHOUN COUNTY—Phillips Pet. Co. et al's Eagle Mills Lbr. Co. 1, 11-16-12, lcn.

CLARK COUNTY—Wm. Henry, Tr.'s Clark 1, 34-9-21, sd 1385 ft.

CRAWFORD COUNTY—Industrial O. & G. Co.'s Brownlee 2, 22-9-31, lcn.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft. Helena O&G Co.'s Pickler 1, 19-19-22, ream to bottom lime 2647 ft. Dr. Bus et al's Jones 1, 5-17-18, bldg dk.

DALLAS COUNTY—Robt. H. Dedman's Hillman 1, 20-10-13, lease expired dry abn td 1145 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 35-13-5, trying to clean, td 2553 ft. Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, dr 3700 ft.

FAULKNER COUNTY—Gold Creek O & G Co.'s Stermer 1, 17-4-13, temp abn, td 3462 ft.

FRANKLIN COUNTY—Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3-19w, sd 2988 ft. Chaywood Oil Co.'s Malvern Lbr. Co. 1, sd wo 1668 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, sd 1400 ft.

JOHNSON COUNTY — Ark. Nat. Gas Corp.'s Bynum 2, 12-10-24, set 8-in cas 2530 ft, dr 2565 ft. McPherson 1, 10-10-24, fsh tools, td 3455 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 21-12-13w, sd 2941 ft.

LOGAN COUNTY—Ark. La. Pipe Line Co.'s Hanna 1, 26-7-23, dr 2260 ft. Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, pulling cas to abn, td 4600 ft

OUACHITA COUNTY—Chas. McDonald's Wilson B-2, 25-15-18, sw abn, td 2906 ft. Magnolia Pet. Co.'s C. M. & K. Wilson 1, 25-15-18, coring 3013 ft. Root Ref.'s Wilson 1, 25-15-18, swabbed sw and oil 2863 ft, cored 2869 plug back 2845 ft, cemt setting. Flaucher et al's Bucks 1, 7-15-17, sd wo 2475 ft. Cumberland Pet. Co.'s Burton 1, 24-15-18, coring 2930 ft. Timberlake et al's Wright 1, 25-14-18, dr 2272 ft. Geo. Kouri et al's Henson 1, 24-15-18, lcn. Ark. Drilling Co.'s Crowley 1, 27-15-18, dr 1205 ft.

ST. FRANCIS COUNTY — W. F Harris' Halbert 1, 32-4-4, lcn

UNION COUNTY—Sundy et al's Yocum 1, 29-16-17, dr 3450 ft. Hawthorne O.&G. Co.'s Smith 1, 8-16-17, dr 3215 ft. La. Oil Ref. Corp.'s Manley 1, 15-15-19, dr 4308 ft. Wesson et al's Booth 1, 12-15-19, sd 2227 ft. Foster et al's Murphy Land Co. 1, 22-17-17, sd 1400 ft. J. O. Moore, Tr.'s Union Sawmill 1, 11-18-17, dr 2944 ft. J. P. Hawkins et al's Goodwin 1, 36-17-16, dr. Grimes Bros.' Hill 2, 7-18-14, cemt 6-in cas 2241 ft. W. M. Coates, Tr.'s McDuffie 1, 32-19-16, dr 1020 ft. J. W. Olvey's Cottrell 1, 22-19-17, dry, abn blue gmbo, td 3503 ft. Gulf Ref. Co.'s Rosa L. Cook 1, 1-18-15, coring hard grey sand 3602 ft. Gaddy 2, 30-17-14, coring grey sand 3344 ft.

OKLAHOMA

GRANT COUNTY—T 28n, R 3w, Sec. 24, Consolidated Gas Ut. Co. et al's Conneil 1, nw c, hfw 4435 ft, sd 4605 ft td.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair's Share 1, c ne sw, co 289 ft.

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros.' Forbes 1, ne s se nw nw, sd 175 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat'l Union's McNeal 1, nwc ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft, litigation.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, show gas 5003-19 ft, hfw 5005-19 ft, ur 6-in at 5038 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollmer 2, nec se ne sw, lost tools, sd 5640 ft.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al's Copenhaver 1, nwc, spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma Oil Co.'s Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, co to ur 6-in at 4755, td.

WOODWARD COUNTY—T 23n, R 20w, Sec. 2, John Farran's Belva, csl sw se, drlg 1100 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's Creech 1, nec sw, sd 510 ft.

WOODWARD COUNTY—T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft, rig

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down. T 21n, R 19w, Sec. 15, Burgoyne Bros.' Merkin 1, swc se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Morton 1, c ne ne, spudded and sd.

DEWEY COUNTY—T 19n, R 18w, Sec. 18, J. V. Bailey et al's 1, c se ne, spudded and sd.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co.'s Phillips 1, c nw sw, drlg 740 ft.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckelby & McCoy's Perfect 1, nec, sd 4500 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healy & Consolidated Drlg. Co.'s Quier 1, sec sw, sd 3970 ft.

KINGFISHER COUNTY—T 16n, R 6w, Sec. 9, A. D. Spears' Platt 1, swc nw, sd 3223 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears 1, swc nw, sd 3223 ft.

CIMARRON COUNTY—T 5n, R 5 E.C.M., Sec. 22, Magnolia's School Land 1, c se ne, drlg 3315 ft.

TEXAS COUNTY—T 1n, R 15 E.C.M., Sec. 25, Skaer et al's Hitch 1, nws, spudding.

OSAGE COUNTY—T 26n, R 7e, Sec. 13, Wrightman Pet. Co.'s 1, sec nw, rigging up; T 26n, R 9e, Sec. 20, Wrightman Pet. Co.'s 1, nwc ne nw nw, drlg 425 ft.

CREEK COUNTY—T 19n, R 8e, Sec. 35, Murphy Oil Co.'s Lapham 1, swc ne sw, location.

LINCOLN COUNTY—T 16n, R 4e, Sec. 15, J. V. Bailey et al's House 1, c ne se, drlg 4035 ft.. T 16n, R 5e, Sec. 2, L. B. Wheeler et al's Wolfe 1, nwc ne sw, drlg 3910 ft. Sec. 19, T.P.C. & O. Co.'s Seabo 1, nwc, drlg 4325 ft. T 16n, R 6e, Sec. 19, Flynn & Morgan's Finley 1, swc, ur 12½-in at 1104 ft. T 15n, R 5e, Sec. 31, I.T.I.O. Co.'s Crane 1, nec sw sw, Water 4814-4847 ft, drlg 4860 ft. T 14n, R 6e, Sec. 33, Magnolia Pet. Co.'s Mitchell 1, nec, drlg 2790 ft. T 12n, R 3e, Sec. 29, Phillips Petroleum Co.'s Roberson 1, sec nw, rig.

OKFUSKEE COUNTY—T 12n, R 7e, Sec. 29, Barnsdall's Soweka 1, nec sw, drlg 4597 ft.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURGH COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, 3M gas 1325-90 ft, 2M gas 1890-95 ft, 3M gas 4472-4525 ft, 3M gas 4613-35 ft, Wilcox 5443 to 5496 ft, small show oil 5446-70 ft, 1M gas at 5464 and 5480 ft.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, sd 1800 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O. & G. Co.'s Murray 1, swc, 1½M gas 2518-30 ft, drlg 3570 ft.

OKLAHOMA COUNTY—T 12n, R 3w, Sec. 15, Cromwell's Thompson 1, swc ne ne, fshg 7182 ft. T 12n, R 2w, Sec. 30, Magnolia's Noble 1, nwc sw sw, cmtg 10-in at 4078 ft. T 12n, R 1w, Sec. 19, Mid-Kansas & Ramsey's Trosper 1, nec nw, drlg 685 ft.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 6, Superior et al's Carolina 1, sec, location.

SEMINOLE COUNTY—T 10n, R 7e, Sec. 20, Gypsy's Harjo 1, nwc ne ne, rig on ground.

POTTAWATOMIE COUNTY—T 8n, R 5e, Sec. 33, Phillips & Furhman's Raper 1, swc se, location.

SEMINOLE COUNTY—T 8n, R 7e, Sec. 4, Magnolia Pet. Co.'s Reed 1, nec sw, drlg 1300 ft.

HUGHES COUNTY—T 8n, R 11e, Sec. 25, McGee Bros.' Smith 1, sec sw, rig.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner Oil Co.'s Vandeveer 1, nec nw sw, sd 3120 ft.

SEMINOLE COUNTY—T 6n, R 5e, Sec. 11, McCulloch's Powell 1, nwc, drlg 1950 ft. T 6n, R 7e, Sec. 9, Gypsy Oil Co.'s Thomas 1, sec nw, drlg. 3055 ft. Sec. 34, Magnolia's Harjo 1, nec se, drlg 4215 ft.

HUGHES COUNTY—T 6n, R 8e, Sec. 5, Shell et al's Tiger 1, sec ne, drlg 4230 ft.

SEMINOLE COUNTY—T 6n, R 8e, Sec. 9, The Texas Co.'s Bryant 1, sec ne sw, surface pipe 31 ft. T 5n, R 7e, Sec. 3, I.T.I.O. et al's Factor 1, swc ne se, drlg 1650 ft.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, drlg 3730 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec, ur 10-in 2435 ft.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Tall 1, c nw nw, fsg 1805 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, J. S. Cosden's Richardson 1, nwc ne ne, drlg 1855 ft. Sec. 7, McGinley & Sigler's Wiltsey 1, nwc se se, location. Sec. 10, E. W. Whitney's Miller 1, sec ne, sd 202 ft. T 1n, R 9e, Sec. 24, Galbreath et al's Jones 1, swc se, fsg 3350 ft. T 1n, R 11e, Sec. 10, I.T.I.O.'s Cook 1-a, sec sw nw, sd 7038 ft. T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt 1 Wellmans, c sw, sd 100 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Bucy & Stone's Williams 1, c sw, location. T 11n, R 26w, Sec. 4, L. C. Hivick's Davis 1, c nw ne, sd 700 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd after spudding.

BECKHAM COUNTY—T 8n, R 25w, Sec. 30, Benedum-Trees Oil Co.'s Rogers 1, swc, drlg 1920 ft. T 8n, R 22w, Sec. 20, Carson et al's Denby 1, swc se ne, fsg 1435 ft.

GREER COUNTY—T 6n, R 24w, Sec. 17, I.T.I.O. et al's Fee 1, c ne, sd 1137 ft.

CADDO COUNTY—T 6n, R 10w, Sec. 26, English Drlg Co.'s Gardner 1, nwc sw, sd 3465 ft.

HARMON COUNTY—T 4n, R 26w, Sec. 8, S. M. Stauffer's Castleman 1, nwc se, location.

STEPHENS COUNTY—T 2n, R 8w, Sec.. 27, Smythe et al's Shaw 1, c ne ne, rig.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, nec, sd 2020 ft.

TILLMAN COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, nwc se, show oil 599 ft, sd 709 ft. T 1s, R 18w, Sec. 25, Wirt Franklin's Zweig 1. c nw, drlg 2032 ft.

COTTON COUNTY—T 1s, R 11w, Sec. 24, Birdwell et al's Crow 1, sec sw sw, rigging up rotary.

KIOWA COUNTY—T 2s, R 16w, Sec. 6, Landfair 1, sec sw se, sd 2535 ft.

COTTON COUNTY—T 2s, R 12w, Sec. 31, Pearce & Brown's Heitzler 1, nwc, sd 2716 ft. T 3s, R 11w, Sec. 18, Heydrick et al's White 1, nwc ne se, drlg 2355 ft.

STEPHENS COUNTY—T 3s, R 7w, Sec. 4, Ellis Drlg. Co.'s Yates 1, swc ne, rigged up and sd. T 3s, R 6w, Sec. 4, Carter and others' Woolsey 1, sec sw ne, location.

TILLMAN COUNTY—T 4s, R 14w, Sec. 16, Ridgeway et al's Barnes 1, nwc ne, location.

COTTON COUNTY—T 4s, R 9w, Sec. 31, Amerada Pet. Corp.'s De Lana 1, sec nw nw, fsg 1665 ft.

JEFFERSON COUNTY—T 5s, R 8w, Sec. 16, Pearce & Brown's School 1, sec ne nw, location. T 5s, R 7w, Sec. 35, Amerada Pet. et al's Majors 1, sec nw nw, location.

McCLAIN COUNTY—T 5n, R 2e, Sec. 31, Tidal et al's Haberson 1, c se se, fsg 4148 ft.

GARVIN COUNTY—T 3n, R 3w, Sec. 36, Gilcrease-Douglas Oil Co.'s Barnett 1, sec nw ne, sd 3950 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, drlg 2265 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smith-Kinsley's Lane 1, sec nw, sd 1900 ft.

CARTER COUNTY—T 4s, R 1e, Sec. 32, Leonard Woodruff's Zellner 1, nwc sw ne, machine. T 4s, R 2e, Sec. 32, Tex-Okla Drlg. Co.'s Anderson 1, sec ne se, sd 420 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. G. Endicott et al's Craige 1, c nw ne, sd 1390 ft.

CLEVELAND COUNTY—T 10n, R 2w, Sec. 8, Phillips, Prairie & Slick's Sudik 1, c ne ne, 5581 ft, R.S.U.T.

OKLAHOMA COUNTY—T 13n, R 3w, Sec. 18, Slick, Bailey & Prairie's Wilkins 1, c ne se, drlg 5130 ft.

WOODWARD COUNTY—T 23n, R 17w, Sec. 23, Transcontinental & Prairie's Wilbur 1, nec, drlg 3450 ft.

OKFUSKEE COUNTY—T 11n, R 9e, Sec. 2, Producers & Refiners' Palmer 1, nwc ne, drlg 3570 ft.

MOUNTAIN STATES

MONTANA

BROADWATER—Swoboda et al, 1, 36-7n-2e, dr. New Day Oil Co., sw 29-5n-1e, dr 900 ft. Conrad McDonald, nw 7-8n-1e, skdg to new location.

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, sd engine repaired, td 3410 ft.

CARBON—Ohio Oil Co., Northern Pacific 2, 11-7s-21e, dr 200 ft.

CASCADE—U. S. Pete Co., Miller 1, 8-21-4w, oil show 1100 ft. Lone Star, McLean 1, 13-21n-3e, dr. Rothrock & Reynolds, McIver 1, se 12-20n-2e, sd 200 ft. Eden Oil Co., sw 27-18-4e, dr 630 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, td 1735 ft last report. Williston-Shelby O. & G. Co., 1, 12-28-11e, sd 2765 ft.

CUSTER—Montana Belle Oil Co., Loesch 1, 28-8n-45e, dr 2650 ft.

FERGUS—Minn. Pete., ¼ sw 5-12-25e, drg 1120 ft.

GALLATIN—California Co., Ringling 1, 35-5n-7e, ur 961.75, td 989 ft.

HILL—A. H. Perkins, Brown's Coulee 1, nw 32-34-14e, mvg in.

JUDITH BASIN—Gem Oil Co., 15-16-10e, rig up.

LIBERTY—Sunburst O. & R. Co., Bear's Den 1, nw 17-36-6e, dr 2100 ft. Square Deal Pete Co., Johnson 1, se 1-32-7e, cas part'd 3230 ft. Mid-Rocky Dev. Co., Federal Lands 1, 7-35-7e, sd 1500 ft. Western Nat'l Gas Co., Morrison 1, 5-37-4e, water shutoff 960 ft. Cypress Oil Co., State 1, 36-28-6e, dr 1960 ft.

PHILLIPS—Big Dome O. & G. Co., 1, ne 1-32n-32e, resum at 2100 ft.

PONDERA—Miller Bros., Bruins 1, nw 17-28-1w, rig up. Montana Expl. Co., Mare 1, ne 2-28-3w, repair rig, td 2965 ft.

POWDER RIVER—Montasota O. & G. Co., Nuzimm 1, 7-8s-53w, dr 500 ft.

STILLWATER—J. S. Stewart, 5-2n-22e, show consid gas 2300 ft.

SWEETGRASS—Shoshone Consolidated, 1, 23-2n-15e, td 4060 ft.

TETON—Ohio Oil Co., Coghill 1, 32-26-2w, dr 550 ft.

TOOLE—Sunburst O. & R. Co., Sunburst 1, nw 10-34-3e, rig up. Monalta Oil Co., Ltd., Buckley 1, se 1-37-4w, dr 500 ft. B. & B. Oil Co., Dunkirk 1, nw 20-31-1e, will resume, td 600 ft.

WYOMING

BIG HORN—P. & R., 39, 24-51-93, sd 600 ft; 3, 24-56-98, rigged rotary, td 2708 ft; South Frannie 2, 7-57-97, rig up; South Frannie 1, 7-57-97, shut down 1940 ft. Cody Pete, 1, sw 27-57-96w, sd 1415 ft. Cross Gas Co., 1, 23-56-97, good show 4205 ft. Forsman Bros., 17-57-101, fsh 2000 ft. Ohio Oil Co., Easton 1, 33-56-97, 15½-in at 106 ft.

CARBON—P. & R., 2-19-88, td 4003 ft, filling hole with salt water.

CONVERSE—Criterion Oil Co., ne 5-31-70, ready to resume 3600 ft.

FREMONT—P. & R., Muskrat 2, nw 1-33n-92w, rig up. Kinney Coastal, 22-3n-1w, landed 10-in at 2175 ft.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, dr 2175 ft. MacPherson Oil Co., sw 2-44n-98w, set 5 3/16-in and dr ahead 3317 ft.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, dr 2950 ft. O. M. Topley, Sage structure, prep to resume at 450 ft.

PARK—California Expl Co. and P. & R., Pitchfork 1, 12-48n-102w, sd at 225 ft. Midwest, Rosenburg 36, 25-58-98, dr 2125 ft.; Kirk 36, se 23-56n-98w, completing at 2803 ft. Cody Pete Co., 1, ne 4-54n-102w, dr 3510 ft; 1, 16-53-98w, dr 2775 ft; 1, ne 4-54n-102w, dr 3510 ft; 1, 16-53-101, bldg rig. Oregon-Wyoming Oil Co., 31-51-101w, spd. Grebo Royalties, 2-47n-100w, sd 1700 ft. Resolute Oil Co., nw 17-57-101, set 12½-in at 1935 ft, td 2155 ft. Henderson Prod. Co., 31-58-99, try mud off gas.

SWEETWATER—Mtn. Fuel Supply Co., Tucker 1, 18-13-99, sd 2480 ft; Humphreys 1, 2-12-101, run 7⅝-in at 3550 ft; Otto Arnold 1, 24-19-104, dr 2330 ft. P. & R., 1, 26-20-104, pipe frozen at 3525 ft. Vermillion Oil Co., sw 16-12-99, ready to resume at 620 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, dr 1739 ft; Buchell 1, 11-29-115w, sd 2503 ft, will drop from report.

UINTA—California Co., U. P., 1, 7-17-119w, dr 3175 ft. H. Allen Rispin, LeRoyl, 5-16-117w, prep to resume.

WESTON—Continental Oil Co., 1, 11-45-64, wlil deepen from 1000 ft. California-Wyo. Drill. Synd., 15-44n-64w, oil show at 4350 ft, prep to resume.

COLORADO

ARCHULETA—Juanita Oil Co., Harvey 1, sw 4-32n-3w, stand 735 ft, bar roads.

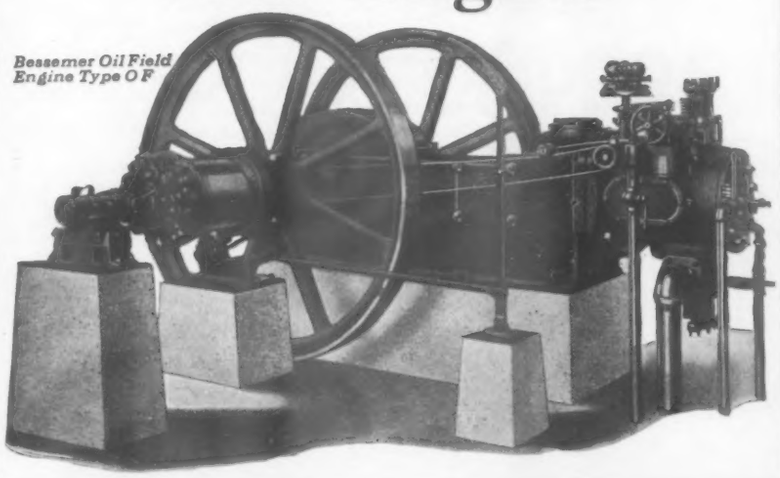
BENT—Marland Oil Co., Pipe Springs 1, se 27-29s-49w, install cable tools.

ELBERT—Progressive O. & L. Co., Pease 1, sw 27-10s-60w, spd 70 ft.

JEFFERSON—Ruby Hill O. & G. Co., Braden 1, se 14-4s-69w, dr 1950 ft.

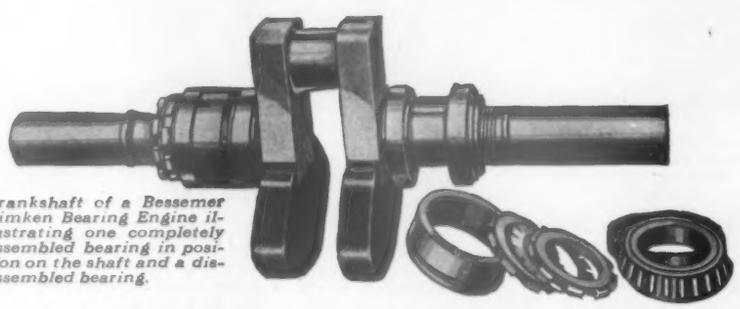
LAS ANIMAS—Parker Club-Kinney Coastal, 4-28s-68w, sd 3008 ft. Okla-Colo O. & G. Co.,

The Engine



Bessemer Oil Field Engine Type O F

The Bearings



Crankshaft of a Bessemer Timken Bearing Engine illustrating one completely assembled bearing in position on the shaft and a disassembled bearing.

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Timken results are wanted. Accept nothing short of "Timken-Equipped".

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

Doherty 1, sw 32-34-60w, compl as water well at 1250 ft.

LARIMER—Barrows et al., 7-11s-68w, sd 2000 ft.

LA PLATA—Royal P. & R., Red Mesa 1, 27-33n-12w, ready to resume at 567 ft.

LINCOLN—Kelly Oil Co., State 1, ne 36-14s-57w, dr 1705 ft.

MESA—Peerless Oil Co., Hoel 1, ne 23-8s-104, dr 2610 ft. Parrish & Langston, D. & R. G. Western 1, nw 23-1s-1w, sd 417 ft.

MOFFAT—Mtn. Fuel Supply Co., State 1, 16-12-100, completing as gasser at 3585 ft. McLaughlin et al., Wms 1, 2-3n-91w, dr 3347 ft. McCormick et al., Sales 1A, se 28-4n-92w, spd 15 ft and sd.

MONTROSE—Uncompaghre O. & G. Co., Colorado Title & Trust 1, 27-50n-10w, fsg 2000 ft.

PUEBLO—Continental Oil Co., Shaw 1A., nw 3-22s-63w, dr 1250 ft. Christopher Oil Synd., Stanbeck 1, nw 19-22s-63w, dr 1085 ft. Christy-Frantz Corp., Mannerich 1, sw 34-21s-63w, dr 1145 ft. Sheffer et al., 1, se 4-22s-63w, dr bel Dakota. Security Oil Trust, Bush 1, nw 14-22s-63w, show at 1050 ft, will case. G. E. Stevenson et al., 1sis 1, ne 1-23-63, wait cas, td 620 ft. Sundance Oil Co., Lubers-Oliver 1A, 35-21s-63w, abd. Amarillo Prod. Co., Pahl 1, nw 35-22s-63w, stand 1250 ft.

RIO BLANCO—White Eagle Oil & Refining Co., Fordham 1A, sw 9-2s-96w, spd 62 ft.

YUMA—Major Pete. Inc., Black Wolf 1A, sw 7-2s-43, prep to skd rig. Phillips Pete Co., Andrews 1, nw 3-2s-42, bldg steel rig.

WELD—Platte Valley Pete Corp., Patterson 1, sw 23-8n-61w, deepened to 4300 ft.

NEW MEXICO

CHAVES—Snowden & McSweeney, Merchant 1, ne 27-15s-23e, dr at 4287 ft. R. T. Neal et al., Russell 1, 31-14-25e, fsg 1385 ft. Warman et al., 1, sw 23-13s-24e, sd. Tannehill et al., Butler 1, se 15-21s-24e, dr 985 ft. Transcontinental, Robbins 1, 1-14s-28e, dr 2625 ft.

DE BACA—Matador Oil Co., State 1, sw 6-4n-20e, dr 900 ft. Pittsburgh Oil Co., 1, 16-1s-27e, dr 4455 ft. Transcontinental, McWhorter 1, 6-35-22e, ur, td 4040 ft.

GUADALUPE—Hanchett Oil Co., 2, 14-8n-24e, fsg 2400 ft.

LEA—Midwest, Gregory 22, sw 31-25s-37e, cem 12½-in at 1145 ft; Capps 31, sw 3-19s-39e, ur 1550 ft; Fisher 16, ne 5-20-35, dr 503 ft. Gypsy Oil Co., Mattern 1, 24-21s-36e, fsg 3125 ft. Exploration Co., Record 1, 26-19s-35e, td 4556 ft. Morton et al., State 1, ne 32-11s-38e, fsg 1880 ft. Texas, Sheppard 1, ne 6-26s-37e, spray oil 3230 ft. Cranfill & Reynolds Meyer 1, sw 22-24-36e, ready to spud. Pueblo Oil Co., Scott 1, se 29-25s-37e, dr 2715 ft. Curtis Dr. Co., Nixon 1, 22-18s-24e, sd 1200 ft. Empire Gas & Fuel Co., State 2B, se 8-21s-35e, dr 700 ft; Closson 1, se 6-22s-36e, spdg 25 ft. Texas Pacific Coal & Oil Co., State 1, sw 22-23s-35e, dr 3737 ft. Henderson et al., McDonald 1, se 19-20s-34e, dr 3200 ft. Vacuum Oil Co., 1, 14-17-34, dr 4100 ft. Bordages et al., Hughes 1, 27-19s-38e, stand 4012 ft. Pueblo Oil Co., Scott 1, se 29-25s-37e, dr 2662 ft. Rector Oil Co., King 1, sw 27-25s-32e, operation susp. Maljamar Oil & Gas Corp., Simon 1, ne 29-17s-32e, location. Ohio Oil Co., State 1, sw 9-19s-38e, ready to spud.

McKINLEY—J. W. Halsell, Santa Fe 1, 17-18n-9w, dr 1670 ft. San Juan Coal & Oil Co., 1, se 27-18n-9w, dr 1240 ft.

ROOSEVELT—J. T. Keegan et al., Pepper 1, 6-1s-36e, ready to spud. Smith & Sloan, Lovern 1, se 4-3s-35, dr 915 ft.

RIO ARRIBA—Berringer et al., Hartman 1, ne 8-29n-7w, dr 560 ft.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, ur 4¾-in below 6730 ft. Dorothy Oil Co., 2930-9, mvg in new equipment, 712 ft. Kutz Canon O. & G. Co., Day 1, 29-28-11, stand 722 ft. Blackrock Oil Co., 1, sw 11-25s-13w, to resume soon under new contract. Iowa Oil Synd., Viles 2, 28-29-11, sd 694 ft. Angel Peak Oil Co., Kutz Canon 1, 11-28n-11w, bailer lost, td 3100 ft. Great Mesa Oil Corp., Roderick 1, sw 11-22n-14w, dr 221 ft. Milwaukee-N. M. Synd., Beardsley 1, 30-28-11w, prep to run 6⅝-in 1700 ft. Childers D. & P. Co., Westwater 2, nw 24-31-18s, dr 2361 ft. Reserve Oil Co., Shaffer 2, ne 1-21n-14w, dr 175 ft.

SAN MIGUEL—Benedict-Wilson 1, ne 25-17n-16e, sd 800 ft. Pioneer O. & G. Co., Thunderbird 1, nw 14-15n-16e, dr 1845 ft. Starr Oil Co., Adams 1, ne 25-17n-16e, dr 660 ft.

SOCORRO—Arnold et al., 2, ne 13-6s-1w, sd 1975 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, dr 1800 ft. Hall et al., Pinos Wells 1, sw 25-3n-13e, stand 400 ft. Sinnock et al., Kutchin 1, ne 13-7n-7e, stand 117 ft.

VALENCIA—Rio Puerco Oil Co., N. M.-Ariz Land Co., 2, nw 13-6n-2w, wait pipe 3145 ft. Acme Oil Co., N. M.-Ariz Land Co., 1, 26-6n-3w, stand cem 3670 ft.

TEXAS GULF COAST

Completions

COLORADO COUNTY—
The Texas Co., Kinkler 1, Cat Springs . . . . . * 1450

LIBERTY COUNTY—
Union Explo. Co., Esperson 2, 5 mi w So. Liberty . . . . . * 6014

WALLER COUNTY—
Brazos River State 1, San Felipe. . . . * 500

AUSTIN COUNTY—F. & M. Drlg. Co.'s Mewis 1, w of Raccoon Bend and e of Bellville, sd 3500 ft. Whittington et al's Lass 1, 4 mi nw Bellville, drk.

BRAZORIA COUNTY—Humphreys Corp.'s Bryan 1, Bryan Heights, dr 3057 ft, sandy shale and lime. Meyer et al's Davidson 3, Clemens Dome, bailed at 920 ft. Empire's Brock 3, Stratton Ridge, dr 2430 ft, shale and lime.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 9 mi w Pt. Lavaca, sd 2730 ft.

CHAMBERS COUNTY—Pure's Mayes 2, Lost Lake, dr 1617 ft; Mayes 3, Lost Lake, dr 1767 ft.

COLORADO COUNTY—The Texas Co.'s Kinkler 1, Cat Sprgs., abn at 1450 ft. Shell's Frazier 1, Bernado, dr 1100 ft. Merrett et al's Zverck 1, 2 mi e Ellinger, sd 320 ft. Humble's McGraw 1, Altair, dr 455 ft.

FAYETTE COUNTY—Moore et al's Kerr 1, Muldoon, dr 2372 ft shale. National Oil Co.'s Melcher 1, Plum, testing at 3388 ft.

FORT BEND COUNTY—Gulf's Wolf 15, Long Point, setting cas at 590 ft. Humble's Miller 1, 3½ mi sw Rosenberg, ru. South Texas Pet Co.'s Winkleman 1, Needville, dr 2732 ft gbo.

GOLIAD COUNTY—Humble's Rietz 1, 5 mi n Goliad, dr 1100 ft shale.

HARDIN COUNTY—Guedry Drilling Co.'s Guedry 1, 3 mi s Batson, drk. Gulf Coastal Oil Co.'s Nona Mills 1, 5 mi e Saratoga, sd 1725 ft. West Prod. Co.'s Baker 1, 5 mi e Saratoga, dr 4350 ft sand rock.

HARRIS COUNTY—Humble's Simms-Smith 75, Goose Creek, dr 4450 ft; Warren 5, Hockley, dr 4292 ft sand and lime; Irvin 1, Mykawa, dr 3710 ft hard sand; Woodburn 1, 2 mi s Genoa, ru. Paxton et al's Brubacker 1, 1 mi ne Clodine, sd 1125 ft. Paxton & Pundt's Brown 1, dr 1835 ft gbo. Little York Oil Co.'s Davis 1, Little York, dr 3238 ft gbo. York and Robertsou's Garrett 1, 5 mi se Fauna, drk.

JACKSON COUNTY—The Texas Co.'s Moore 1, Edna, dr 3946 ft sandy shale. Wright Bros.' Drushell 8, Edna, drk; Classen 2, Edna, sd 3945 ft.

JEFFERSON COUNTY—Deep Test Oil Corp.'s McFadden 1, 1 mi e Spindle Top, sd 3500 ft. J. W. Farhar et al's Rohwedder 1, 5 mi ne Beaumont, sd 2965 ft. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brooks, drk. River Oil Co.'s Ship Channel Ld. Co. 1, 2 mi se Beaumont, depth 1320 ft. Bleakie Oil Co.'s Tollivar 1, 2½ mi nw Voth, dr 2215 ft. The Texas Co.'s Pipkin 1, Big Hill, r 5900 ft. Gulf's Thomas 11, Fannett, dr 5060 ft; Bordages A-7, Fannett, dr 5341 ft. Yount-Lee Oil Co.'s Nona Mills 1, 5 mi s Beaumont, dr 6490 ft sand and shale. Shell's Heisig 1, 2 mi n Hampshire, dr 3224 ft sticky shale.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½ mi ne Cleveland, sd 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. The Texas Co.'s Davis 2, Davis Hill, dr 4250 ft sand stone. Humble's Sterling 4, Moss Bluff, abn in salt at 3619 ft. Union Exploration Co.'s Esperson 2, 5 mi w S Liberty, abn at 6014 ft in sticky shale. Tan Bay Oil Co.'s Christian 1, 10 mi n Hardin, sd 1115 ft. Republic Prod. Co.'s Mysilvic 1, 2 mi s Hardin, dr 2610 ft gbo. Gulf's Boyt 1, Hankamer, set cas at 1200 ft. Fort Bend Oil Co.'s Bladerack 1, N. Dayton, dr 3400 ft. Sun's Kovaleik 2, N. Dayton, dr 4125 ft shade.

MATAGORDA COUNTY—Crossland et al's Hawkins 1, Shepherds Mott, dr 5210 ft heaving shale. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft; Baer 1, 1½ mi n Gulf Hill, sd 2120 ft.

ORANGE COUNTY—Veteran Oil Co.'s Reed 1, 2 mi se Orange field, dr 3450 ft gbo. The Texas Co.'s Kuhn 1, d mi e Spindle Top, came in May 9 flowing 1900 bbls 21 gravity oil at 3160 ft.

VICTORIA COUNTY—Humble's Welder 1, 3 mi se Nursery, dr 200 ft.

WALLER COUNTY—Dixie, O. & G. Co.'s Brazos River State 1, abn 500 ft. The Texas Co.'s Young 1, 3 mi from Raccoon Bend, dr 3313 ft shale.

WASHINGTON COUNTY—Thomas et al's Giddings 1, 4 mi e Brenham, dr 570 ft. W. D. Anderson's Rubenstein 1, 4 mi se Gay Hill, sd 340 ft. Brains et al's L. S. Smith 1, 4½ mi ne Gay Hill, ru. Kellett et al's Carter 1, sd 900 ft.

WHARTON COUNTY—Hearte Oil Co.'s Brown 1, 4 mi s El Campo, sd 2243 ft.

SOUTHWEST TEXAS

Completions

BEE COUNTY—
Mission Drlg. Co., Ray 2, 2 mi ne Pettus . . . . . ¶45 2860

GONZALES COUNTY—
Benedum-Trees, Lamkin 1, 1 mi n Ottine . . . . . * 4367
Empire, Norwood 2, Ottine area. . . . * 4226

BASTROP COUNTY—Gypsy Prod. Co.'s Lottman 1, e Bastrop, sd 2565 ft. Livingston et al's McCall 1, s mi s Bastrop, fsg 2750 ft. Owens et al's Goodman 1, 1½ mi Cedar Creek, sd 2327 ft. Howell et al's Weckham 1, 2 mi s Paige, spudded. Gulf's Bell 1, 2½ mi w Sayersville, drk.

CALDWELL COUNTY—Anderson et al's Horner 1, 1 mi s Lockhart, depth 1400 ft. United North & South's Gideon 1, Luling field deep test, dr 4720 ft lime. United-Gulf's Blundell 1, 6 mi se Lockhart, dr 2370 ft shale.

GONZALES COUNTY—Greene et al's Dix 1, 1 mi n Bellmont, sd 1235 ft. Linderman Bros.' Frampton 1, 1 mi n Waelder, sd 610 ft. Benedum & Trees' Lamkin 1, 1 mi n Ottine, abn at 4367 ft in lime. Flynn et al's Wilhouser 1, 12 mi s Gonzales, sd 5212 ft. Empire's Norwood 2, Ottine area, abn at 4226 ft in lime. Joe Bruner's Miller 1, 1 mi n Waelder, dr 2375 ft shale. Crown Pet. Co.'s Hattenbach 1, 8 mi sw Sample, sd 1525 ft.

GUADALUPE COUNTY—Christie et al's Thomas 1, 12 mi se Seguin, sd 1280 ft. Sights et al's Woehler 1, 4 mi e Seguin, sd 2405 ft. Miller Bros.' Springs 1, 5 mi s Seguin, sd 2550 ft. Magnolia's Adams 1, Kingsbury, dr 800 ft shale.

MAVERICK COUNTY—Rycade Oil Corp's Chittim 3, 20 mi e Eagle Pass, dr 3657 ft blue lime; Chittim 4, 20 mi e Eagle Pass, dr 2180 ft; Sullivan 4, 20 mi e Eagle Pass, dr 1620 ft lime.

STARR COUNTY—The Texas Co.'s Virginia Guerra 1, dr 2894 ft shale.

SOUTH LOUISIANA

ASCENSION PARISH—Gulf's United Lands Co. 14, Sorrento, dr 3000 ft gbo; Belle Helene Sugar Co. 1, Darrow, dr 5300 ft sand. Triumph Oil Corp.'s Lacey et al 2, 3 mi se Sorrento twste, dr 2400 ft sand. Big Dome Drlg. & Dev. Co. and J. S. Kimbrough's Rearwood 1, Darrow, sd 3000 ft. Baton Rough Pet. Co.'s Liotta 1, sd 1000 ft.

CALCASIEU PARISH — The Texas Co.'s Moss 1, dr 3740 ft gbo. J. O. Davis' Mimms 1, Lake Charles, dr 2715 ft sandy shale.

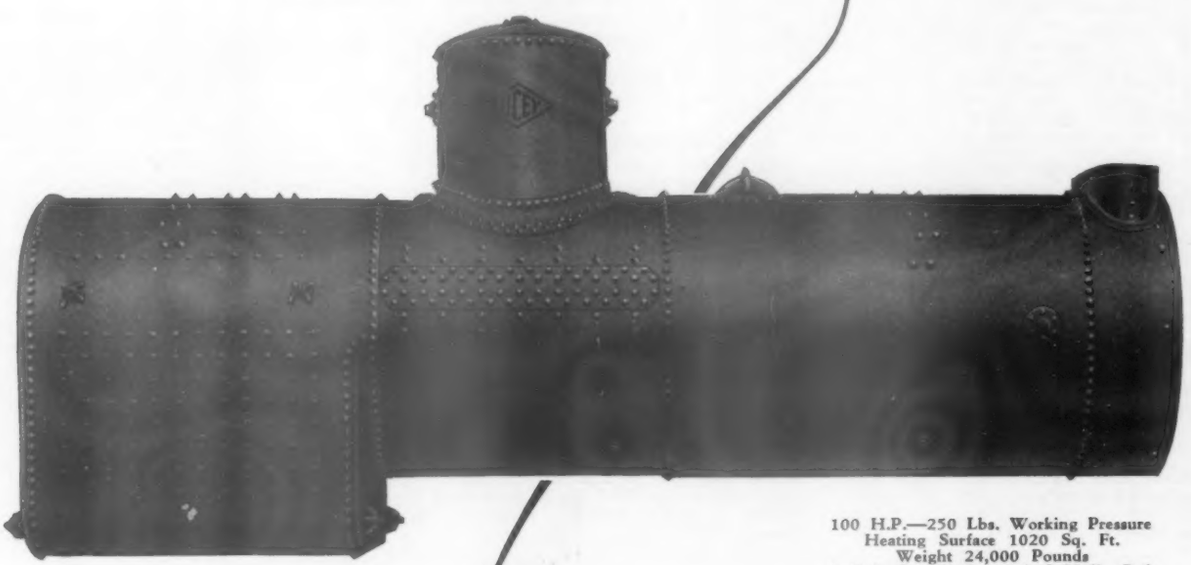
CAMERON PARISH—The Texas Co.'s Calcasieu Lake A-3, s end of Calcasieu Lake, dr 2010 ft gbo. Pure's Yount-Lee 7, Sweet Lake, stuck drill stem at 5000 ft, 5426 ft depth; Yount-Lee 8, Sweet Lake, came in making 50 million ft gas with spray of oil at 5637 ft. Shell's Watkins 6, Black Bayou, came in flowing 1600 bbls fluid, 75 per cent. b.s. and water and 25 per cent. 28 gravity oil at 4727 ft; Watkins 10, Black Bayou, dr 901 ft blue shale.

IBERIA PARISH—The Texas Co.'s Vermilion Bay A-3, sd 4694 ft. Gulf's State Z-9, Loreauville, ru; Moresi Co. et al 1, Loreauville, dr 3800 ft shale.

IBERVILLE PARISH—Shell's Wilbert 3, White Castle, dr 4613 ft shale. Standard of La.'s Wilbert 2, Bayou Blue, dr 2130 ft gbo;

PERFECT PERFORMANCE

The Result of



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Wilber 3, Bayou Blue, ru; Schwing 1, Bayou Blue, dr 4553 ft sand; Schwing 2, Bayou Blue, ru; Schwing 3, Bayou Blue, dredged canal; Schwing 4, Bayou Blue, lcn; Schwing 5, Bayou Blue, dk.

JEFFERSON DAVIS PARISH—Vacuum's Earl et al 1, Roanoke, ml 5920 ft; DeVilbiss 1, Roanoke, sd 5685 ft.

LA FOURCHE PARISH—Gulf's Stark 10, Thibodaux, abn at 1450 ft in cap rock; Stark 11, Thibodaux, abn at 1445 ft in cap rock; Stark 12, Thibodaux, dr 235 ft sand; Stark 13, Thibodaux, set cas at 1090 ft. Union Sulphur Co.'s Dibert, Stark & Brown 3, Thibodaux, abn at 3140 ft; Dibert, Stark & Brown 4, Thibodaux, abn at 2045 ft; Dibert, Stark & Brown 5, Thibodaux, abn at 1770 ft.

PLAQUEMINES PARISH—Gulf's Morris & Rose 1, Spanish Pass, drk. The Texas Co.'s Island Bay 1, 15 mi se Venice, dr 1575 ft rock.

ST. LANDRY PARISH—The Texas Co.'s Botney Bay Lbr. Co. Fee 2, Port Barre, set cas at 1190 ft. Gulf's Gaudet 1, Port Barre, set cas at 1100 ft.

ST. MARTIN PARISH—Ohio Oil Co.'s Martin et al 3, Hager dome, sd 4490 ft. The Texas Co.'s St. Martin Land Co. Fee 1, Hager dome, sd 1235 ft; St. Martin Land Co. Fee 2, Hager dome, sd; St. Martin Land Co. Fee 3, Hager dome, piling standing; St. Martin Land Co. Fee 4, Hager dome, piling standing.

TANGIPAHOA PARISH—Joan Dev. Co.'s Lake Superior Piling Co. 1, nw section 20-5s-9e, dr 2005 ft shale.

TERREBONNE PARISH—The Texas Co.'s Taylor Bayou B-1, sect. 28-21s-14e, lcn; Lake Barre A-2, sect. 30-21s-20e, lcn; Lake Pelto B-1, sect. 8-23s-18e, ru; Four Isle Bayou B-1, sect. 23-21s-16e, dk; Timbalier Bay A-1, sect. 19-23s-20e, set surface cas; Bay Coon Road B-1, sect. 17-22s-18e, dr 200 ft; Dog Lake Bayou A-1, sect. 6-22s-16e, dr 990 ft gbo.

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BORDEN COUNTY—		
Greene O&R Co., Slaughter 1	*	3514
C. E. Hyde et al, Beal 1	*	3540
CROCKETT COUNTY—		
W. A. Moncrief-W. W. Donnelly et al, Todd 1	*	1400
GLASSCOCK COUNTY—		
Meriwether Oil Co., McDowell 2	*	3875
World Oil Co., L. C. McDowell 1-C	300	2398
IRION COUNTY—		
Furhman Pet. Corp., Sugg 1, Lse. 2	*	2450
JONES COUNTY—		
Grisham-Hunter Corp., Hester 1	*	2848
Sedgwick O&G Co., Routh 1	*	3268
MIDLAND COUNTY—		
O. H. Shoup et al, Roy Parks 1	*	4980
PECOS COUNTY—		
Bert Weekly et al, Byrne 1	*	1600
RUNNELS COUNTY—		
Pure Oil Co., H. Giesecke 1	*	1421
H. Giesecke 2	*	1554
STERLING COUNTY—		
Foster-Gracey Oil Co., Foster 1	*	2503

ANDREWS COUNTY — Mid-Continent Pet. Corp.'s Fisher 1, elev 3192 ft, show oil 1500-10 ft, sd 1605 ft.

BORDEN COUNTY—Gibson-Johnson et al's Higginbotham 1, elev 2432 ft, top salt 1135 ft, top lime 2870 ft, dr 3165 ft. W. A. Moncrief et al's Munger 1, lcn. Teas & Wheeler's Long 1, lcn.

BREWSTER COUNTY — Ed. W. Bateman & Co.'s Neville 1, elev 3950 ft, co 1973 ft. Brewster Oil Co.'s Fee 1, dr 1705 ft. E. L. Chapman et al's Skinner 2, machine. J. P. Johnson & Bert Weekly's Jackson-Harmon 1, elev 3972 ft, dr by tools 1045 ft.

COKE COUNTY—W. C. Cates & J. S. Dennis' Mims 1, sd 1655 ft; Mims 2, spudded and sd. Mid-Kansas O&G Co.'s Lackey 1, elev 2152 ft, fsh 3785 ft. Ray McCamey et al's McCutcheon 1, dr 1400 ft.

CONCHO COUNTY—J. L. Duffey et al's Gilliam 1, spudded and sd. Jones & Liner's Jones 1, fsh 1100 ft.

CRANE COUNTY—Gulf Prod. Co.'s Waddell 7, top salt 1108 ft, dr 1380 ft.

CROCKETT COUNTY—W. A. Moncrief-W. W. Donnelly et al's R. Massie 1, (Sec. 47), made 3½ million ft gas 1151-98 ft and sulphur water 1220-40 ft, sd re-bldg burned rig. Donnelly and J. D. Young's Shannon 1, (Sec. 42), elev 2661 ft, sd 780 ft. Eppenauer Drlg. Co. &West Texas Pet. Corp.'s Noelke 1, sd 565 ft. Lewis & Daniels' Pecos River Bed 1, elev 1967 ft, top lime 1002 ft, sd 1008 ft.

CULBERSON COUNTY — Deep Rock Oil Co. & Grisham-Hunter Corp.'s Kloh 1, fsh 1440 ft. Hickey et al's C. O. Finley 1, elev 3916 ft, sd 1910 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, sd 4005 ft.

FISHER COUNTY—Cranfill-Reynolds et al's Willingham 2, elev 1808 ft, top lime 3071 ft, fsh 3475 ft. Culberson Bros. & Mesa Oil Co.'s Griffin 1, elev 1842 ft, sd 2970 ft. J. B. Dunnigan et al's Henry 1, elev 1913 ft, set cas 3260 ft. Gilman-McMurray & French's Cleveland 1, elev 1973 ft, dr 3245 ft. Landreth Prod. Corp.'s Cooper 1, dr 3615 ft. Magnolia Pet. Co.'s A. L. Lee 1, rig. Mid-Kansas O&G Co. & Phillips Pet Co.'s Stephenson 1, rig. Roeser-Pendleton & Amerada's Haught 1, elev 1792 ft, fsh 1965 ft. Texas Co. & Phillips Pet. Co.'s Hall 1, elev 2102 ft, dr hfw 3020 ft. White Eagle O&R Co.'s Hughes 1, elev 1815 ft, dr 2350 ft.

GARZA COUNTY—Emerald Oil Co.'s Reed 1, dr 370 ft. Gulf Prod. Co.'s H. B. Street 1-D, rig.

GLASSCOCK COUNTY—Daniels & Kyle's Meek 1, elev 2792 ft, sd 405 ft. Gibson-Johnson et al's Irene Dean 1, spudding. Texas-State Oil Co.'s Edwards 1, lcn. World Oil Co.'s McDowell 1-C, elev 2530 ft, (Sec. 21, Blk. 34), top lime 2260 ft, pumping 250 bbls oil and comp. 2351-98 ft.

TOM GREEN COUNTY—Williams et al's Wilkey 1, sd hfw 750 ft.

HOWARD COUNTY—A. & F. Oil Co. (was Peck et al)'s Scrivner 1, sd 215 ft. Furhman

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Bailer Bottom

will speed up production in cavy holes by time saved in picking up cuttings.

Star Bottom

used for cutting the sand loose and preferred by some to the Chisel Bottom.

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Pet. Corp.'s Reed 1, lcn. Gibson-Johnson et al's Reed 1, elev 2323 ft, dr 1855 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, lowering 13-inch cas 976 ft. Rio Grande Oil Co.'s Western States Fee 1, dr 205 ft. Western States Oil Co.'s Gardner-Mosely 1, elev 5086 ft, sd 3155 ft; Moore 1, elev 5150 ft, sd 2760 ft.

IRION COUNTY — Furhman Pet. Corp.'s Sugg 1, Lse. 1, machine. Irion County Drlg. Co.'s Tankersley 1, dr 1210 ft. Kimbrough et al's Kutt 1, elev 2299 ft, sd 1420 ft. W. W. Brown-Kimbrough & Flinchbaugh's Tankersley 1, elev 2241 ft, testing good show oil and some water at 1318-29 ft. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr black lime 6705 ft.

JONES COUNTY—Brewer et al's Goodman 1, lcn. Geo. Callahan & Worth Oil Co.'s Britton 1, dr 1615 ft. Campbell et al's King 1, spudded and sd. W. G. Clark et al's Dickenson 1, dr 1830 ft; Milelr 1, lcn. Condor Pet. Co.'s McDonald 1, dr 2225 ft. P. K. French et al's Leeson 1, dr 860 ft. Sam Knepley et al's Horn 1, dr 1550 ft. McGinley-Sigler Co.'s Whittemore 1, set 8-inch cas 1780 ft. E. M. Treat O&G Co.'s Hodges 1, dr 1350 ft. White Eagle O&R Co.'s Teague 1, dr 115 ft.

LOVING COUNTY — Lockhart & Co.'s Hazell 1, elev 2705 ft, rig; Hazell 2, crooked hole 335 ft; Johnson 2, dr 1305 ft; Hubbard 2, elev 2692 ft, top salt 718 ft, dr 3875 ft; Wheat 1-H, elev 2713 ft, top salt 720 ft, dr 3795 ft.

LYNN COUNTY—Hart Oil Corp. & Geo. McCamey's Edwards 1, elev 3128 ft, dr 1325 ft. H. F. Miller et al's May 1, spudded an dsd.

MENARD COUNTY—J. L. Duffey & Carl Cromwell's Winslow 1, dr 310 ft.

MIDLAND COUNTY — Phillips Pet. Co.'s Stokes 1, top salt 1610 ft, dr 2405 ft.

MITCHELL COUNTY—H. H. Adams et al's Ellwood 2, set cas 555 ft. California Co.'s Clark 2, top lime 1540 ft, dr 2325 ft. Clopton & Hammon's McKenzie 1, lcn. Jack Ellis & Atlantic's Ellwood 1, elev 2270 ft, sd in gas pay 633-47 ft. McGinley-Sigler Co.'s H. Hyman 1, rotary rig. Republic Prod. Co.'s Scott 1, rig. Simms Oil Co.'s Ellwood 1, elev 2237 ft, top lime 1215 ft, dr 3505 ft; Ellwood 1-A, elev 2258 ft, dr 1410 ft. Spence et al's W. C. Brown 1, elev 2328 ft, set cas 521 ft. Teas & Wheeler's Radford 1, sd 3965 ft. Westyde Inv. Co.'s Ellwood 1, materials.

NOLAN COUNTY — L. G. Bradstreet & Co.'s Kuteman 1, spudding. Phillips Pet. Co.'s Plunkett 1, cem 20-inch cas 225 ft.

PECOS COUNTY—Atlantic Oil Prod. Co.'s J. C. Trees 1, elev 2489 ft, dr 1010 ft. M. H. Black et al's Pecos Valley 1, elev 2453 ft, top salt 1095 ft, testing with hole full oil 1618-48 ft. Buell-Hagan et al's University 1-B, elev 2760 ft, sd 595 ft. A. R. Bell et al's Gray 1, elev 2532 ft, dr 1315 ft. Karl Crowley et al's Heiner 1, elev 2548 ft, sd 1147 ft. Ditto Oil Interests' Montgomery 1, elev 4434 ft, sd 1505 ft. Doran & McGee's Pecos Valley 1, sd 1030 ft. Cowboy Evans et al's Pecos 1, dk. J. W. Grant et al's Turney 1, elev 2592 ft, top lime 1015 ft, sd 4590 ft. Imperial O&G Co.'s Pecos 1, lcn. Sam Kitts et al's Sherbino 1, fsh 250 ft. Marland Prod. Co.'s University 1, lcn. Mauch & Krogen's Holmes 1, elev 2325 ft, top salt 535 ft, sd 1442 ft. R. E. Moore et al's Arnold 1, sd 225 ft. W. A. Moncrief et al's Tippett-Unit plan 1, dr 205 ft. J. D. O'Mara et al's Byrne 1, spudded and sd. O. J. Perren et al's Eaton 1, elev 2497 ft, to psalt 1090 ft, sd 18 million ft gas 1490-1502 ft. Phillips Pet. Co.'s Courtney 1, elev 2951 ft, dr 850 ft. Plymouth Oil Co.'s F. A. Perry 2, dr 580 ft. Schumaker et al's Williams 1, elev 2388 ft, dr 1245 ft. Shell Pet. Corp.'s University 1, machine. Shell & Kirby Pet. Co.'s University 1, elev 2628 ft, dr 4565 ft. Ervin Drlg. Co. et B. J. Spikes et al's Brown 1, elev 2387 ft, top salt 740 ft, sd 1210 ft. Talbot et al's Unsicker 1, lcn. Taylor-Link Oil Co.'s University 1, dr 195 ft. Tidal Oil Co.'s University 1, dr 170 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 and 3315 ft, fsh 4312 ft; University 1-B, dr 1155 ft; White & Baker 1, elev 2810 ft, dr 1260 ft. Trees Oil Co. & Empire's J. C. Trees 1, elev 2461 ft, top salt 1760 ft, co after shot 105 qts at 2133-2220 ft. Clayton Williams et al's Sanford 1, machine.

PRESIDIO COUNTY—Brite Prod. Co.'s L. C. Brite 3, sd 900 ft. C. E. Miller-Delmar & Phillips Pet. Co.'s Tootle 1, sd 2470 ft.

REAGAN COUNTY—Kemrow & Co.'s Sawyer 1, lcn. Skelly Oil Co. et al's University 4, elev 2852 ft, top salt 1270 ft, dr 2210 ft. Big Lake Oil Co.'s University 1-C, elev 2731 ft, top salt 1100 ft; lowering cas 2475 ft; University 2-C, elev 2703 ft, top salt 1071 ft, dr 2355 ft; University 131, running cas in gray lime 6251 ft.

REEVES COUNTY—Earl Hemby et al's M. G. Huling-Brooks 1, lcn. Penn Oil Co. et al's Bowles 1, elev 2783 ft, top salt 1725 ft, dr 5400 ft. Southern Crude & Dixie Oil Co.'s Klch 1, elev 2784 ft, fsh 1440 ft. D. R. Thompson et al's Eddins 1, sd 5658 ft. Lee O. White et al's Kloh 1-A, elev 3244 ft, sd 1240 ft.

RUNNELS COUNTY—Herbert Oil Co. et al's sd 450 ft. Independent O&G Co.'s Rollwitz 1, dr 1960 ft. Marland Prod. Co.'s Herring 1, elev 1821 ft, show oil 3204-10 ft, ur cas 3450 ft. Ira Nourse & E. Tilton's Cramer 1, elev 1775 ft, will deepen sd 3815 ft. Reese & Cates' Clayton 1, elev 1775 ft, sd 1185 ft. Vacuum Oil Co.'s McMillan 4, lcn.

SCHLEICHER COUNTY — Ft. McKavitt Oil Co.'s Tisdale 1, elev 2155 ft, sd 3002 ft. Interstate Explo. Co.'s Whitten 1, sd 3545 ft. Underwood Oil Co.'s Tisdale 1, rig.

SCURRY COUNTY—R. B. Pender et al's Davis 1, elev 2208 ft, top salt 445 ft, sd 2600 ft.

STERLING COUNTY—Miller Bros. et al's Foster 1, elev 2662 ft, top salt 1140 ft, top lime 2094 ft, sd 2982 ft. Wilson et al's Ellwood 1, dr 460 ft.

SUTTON COUNTY — Phillips Pet. Co.'s Holman 1, elev 2247 ft, top lime 2315 ft, dr shale 6505 ft. L. G. Priest et al's Allison 1, dr 2445 ft. Southern Crude & Dixie Oil Co.'s Allison 1, td 4445 ft, cemented hole at 4050 ft.

TAYLOR COUNTY—J. B. Jackson et al's Webb 1, contract comp. co 2504 ft. Mid-Continent Pet. Corp.'s Taylor 1, elev 1933 ft, co after 2nd shot, td 3007 ft. C. M. Root Drlg. Co.'s Martin 1, dr 1415 ft. Thomson et al's Hamner 1, sd 2615 ft.

TERRELL COUNTY — Keck-Pecos Oil Mrs. J. B. McPhee et al's Sam Belt 1, dr 415 ft. Trust's Hamilton 1, elev 1733 ft, dr 2170 ft. Milham Corp.'s Bassett 1, elev 2270 ft, dr

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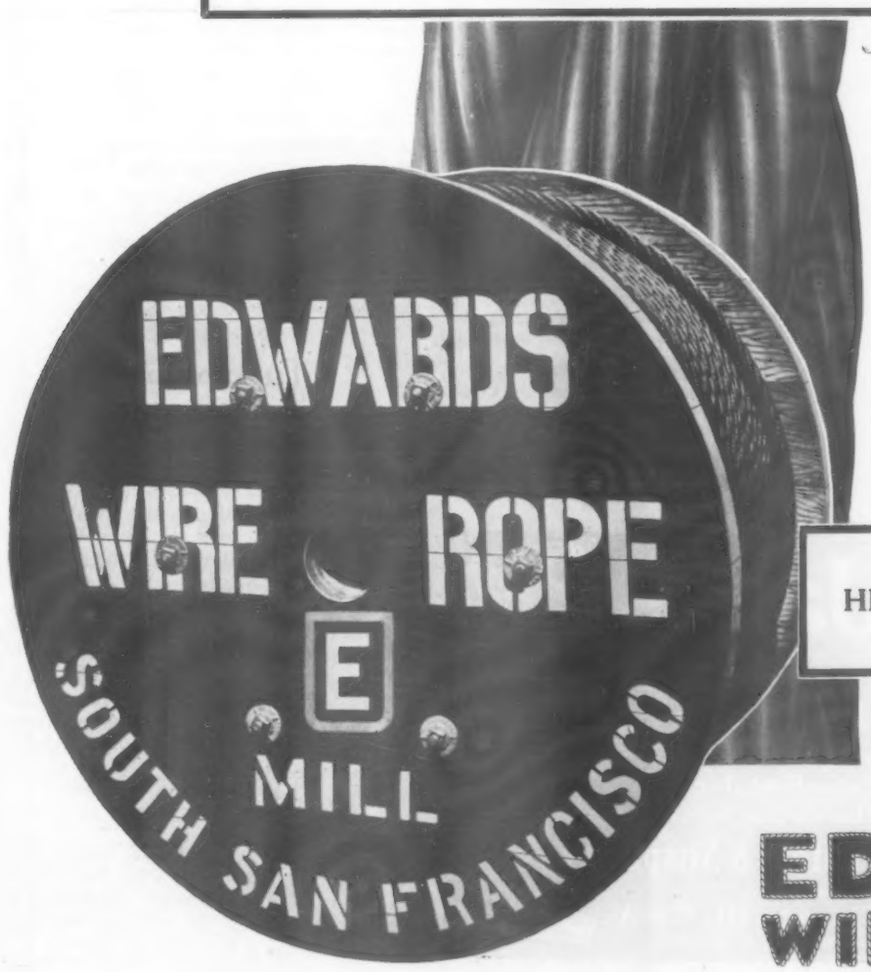

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4795 ft. Wooley-Jones et al's Pankenham 1, elev 2607 ft, dr 655 ft.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, elev 2115 ft. Producers Oil Co. et al's Everett 1, sd 2450 ft. Val Vert Oil Corp.'s Bassett 1-A, elev 2069 ft, sd 3760 ft.

WARD COUNTY — Atlantic & Delmar's Hayzlett 2, dr 120 ft. Barstow O&G Co.'s Monroe-Gillespie 1, spudded and sd. Gulf Prod. Co.'s O'Brien 5, dr 835 ft; Hutchings 2, dr hfw 735 ft. J-H-L Oil Co.'s Hayzlett 2, elev 3505 ft, top salt 745 ft, flowing 110 bbls oil 2430-31 ft. Kimberlin et al's Thompson 1, lcn. Penn Oil Co. & Atlantic Oil Prod. Co.'s Bennett 1, lcn. Tex-Oil Prod. Co.'s Redman 1, sd 960 ft.

WINKLER COUNTY—M. J. Bashara et al's Fee 1, elev 2883 ft, top lime 2450 ft, sd gauged 19,430,000 ft dry gas 2481 ft. Liner Drlg. Co.'s Campbell 1, spudded and sd. Magnolia's Scarborough 2, dr 110 ft. Prairie O&G Co.'s Scarborough 1, elev 2914 ft, flowing 150 bbls oil daily, plugging back from water 3133 ft. Shell & Llano Oil Co.'s Scarborough 6, rig. Texas-Canadian Oil Co. & Superior's Kloh 1, elev 3243 ft, top salt 1490 ft, sd 4008 ft. Tidal Oil Co.'s Scarborough 1, rig.

YOAKUM COUNTY—Bert Weekly et al's Knight 1, co and ur 10-inch cas 1105 ft.

EAST TEXAS

BOWIE COUNTY—Hooks O. & G. Co.'s Rosenberg 1, King sur, temp abn, td 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd 1920 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, dr 1625 ft. Shad Harper's Garland 1, Jos. Wagley sur, sd wo 1862 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd wo 1440 ft.

SHELBY COUNTY — Chaparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3004 ft. Gulf Ref. Co.'s Carraway 1, Patterson sur, dr grey lime and blue shale 4368 ft.

NORTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Big Ben Oil Co., Stewart 2, 15-18-12	*	1300
CADDO PARISH—		
J. O. A. Carper, Tr., Hammack 2, 34-18-16	*	920
MOREHOUSE PARISH—		
Woodley & Collins, Harp 1, 22-22-7e	*	3063
SABINE PARISH—		
R. L. Gay, Tr., Sabine Lbr. Co. 1, 13-7-14	*	2936

BIENVILLE PARISH—W. G. Gray, Tr.'s, Snyder 1, 15-16-6w, 10-inch cas 300 ft.

BOSSIER PARISH—Nell & Lanier's Bidenharn 1, 23-21-14, sd 790 ft. Ben Oil Co.'s Stewart 2, 15-18-12, dry abn, td 1300 ft. Walker et al's Antrim 1, 28-22-13, tested show oil no gas or sw 3048 ft wo. John F. Woodman's Bolinger 1, 9-22-11, sd wo 3100 ft. Magnolia Pet. Co.'s B. M. Cook 1, 2-22-11, coring shale 3661 ft. Triangle Drilling Co.'s J. H. Fullilove 1, 11-17-12, dr 400 ft.

CADDO PARISH—J. O. A. Carper's Hammack 2, 34-18-16, dry abn, td 920 ft. Lide & Davidson's Glassell 1, 1-19-15, top Blossom sand 1844 ft, arr core 1845 ft. Root Ref. Leibman 1, 12-19-15, fsh bit in chalk rock, td 1500 ft. Ohio Oil Co.'s Hunter Est. 1, 17-19-14, lcn. Standard Oil Co. of La.'s W. K. Henderson 1, 7-19-14, moving in rig. P. W. Oden 1, 18-19-14, lcn. Hunter Est. 2, 8-19-14, lcn; Hunter Est. 3, 17-19-14, lcn. Gulf Ref. Co.'s P. W. Oden 1, 18-19-14, lcn; P. W. Oden 2, 18-19-14, lcn.

CATAHOULA PARISH — Lochnager O&G Co.'s Taliaferro 1, 26-9-6e, sd 900 ft.

DE SOTO PARISH—P. J. Becker's Tull 1, 23-12-15, junked abn 1361 ft, skidded 30 ft south, sp new hole, dr 50 ft. Carlton Drilling Co.'s Stephens 2, 12-11-16, sd wo 2046 ft. Thorn Oil Co.'s Burford 1, 22-14-14, sd wo 3020 ft. Longstreet Synd.'s Ramsey 1, 33-13-16, fsh cas td 2802 ft.

FRANKLIN PARISH — Ruston Drilling Co.'s West Va. Lbr. Co. 1, 23-15-7e, dr 350 ft. Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

GRANT PARISH—Carter & Collins' Bell Lbr. Co. 1, 29-7-1w, abn td 2410 ft. Hardtner & Tannell 1, 9-6-1w, sd wo 2809 ft.

JACKSON PARISH—Geo. O. Baird's Tremont Lbr. Co. 1, 24-17-1w, rig up.

LINCOLN PARISH—V. E. Shaw's Voss 1, 1-20-3w, arr ds test 2740 ft.

MOREHOUSE PARISH—Woodley & Collins' Harp 1, 22-22-7e, sw abn, td 3063 ft. Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk.

NATCHITOCHES PARISH — S. D. McDaniels' Clarke-Morse Lbr. Co. 2, 23-5-6w, sd wo 2536 ft. Robeline O. & G. Co.'s Cassady 1, sd repr rig, td 3085 ft.

OUACHITA PARISH — Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-4e, wait on 6-inch cas cmt to set,(td 3600 ft.

RAPIDES PARISH—G. E. Silbertson's Willemach 3, 13-5n-4w, sd wo 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

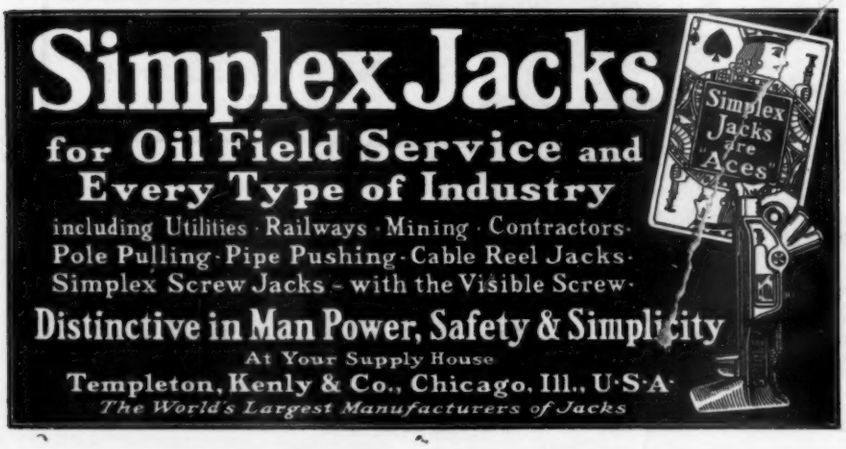
RICHLAND PARISH—S. C. Wilson's Buie 1, 17-15-7e, sd 1946 ft.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd 625 ft. R. L. Gay, Tr.'s, Bowman-Hicks 2, 14-7-14, tested sw ds test in sandy shale 3569 ft, arr deepen. Bowman-Hicks 3, 14-7-14, br formation 2178-2238 ft, completed flowing 10 bbls daily through tubing, may reset liner in effort to increase yield. Sabine Lbr. Co. 1, 13-7-14, dry abn, td 2936 ft. Long-Bell Lbr. Co. 1, 26-8-14, dr 350 ft. A. H. Tarver's Long-Bell Lbr. Co. 1, 29-8-13, dr 2070 ft.

TENSAS PARISH—Enochs et al's Curry 1, 39-11-12e, plugged back to 3522 ft to shut off sw, td 3583 ft.

UNION PARISH—Texas Co.'s F. M. Fuller 1, 9-21-2w, rigging up. Sundby et al's Security Trust 1, 6-23-1e, sd wo 2300 ft. G. E. Carmatte's Tugwell 2, 21-22-1e, arr test 1845 ft, td 1931 ft. Carter & Wingfield's Clark A-3, 8-23-1e, dk. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd 1500 ft.

WEBSTER PARISH—P. Hudson's Slack 1, 1-22-11, sd repr rig 2465 ft. Nemours Corp.'s Munn 2, 1-22-10, tested 4 mil ft gas, wo 2633 ft. Magnolia Pet. Co.'s Atkins 1, 4-22-9, cored sand strikes shale showing oil 2662 ft. John F. Woodman's F. Woodman's Boyd 1, 3-22-11, dk. Magnolia Pet. Co.'s Denman 1, 1-22-11, cleaning to bottom, td 2716 ft.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California Wildcats

Santa Barbara, Calif.—Several Santa Barbara County wildcats have reached the interesting stage and a series of tests are under way which probably will determine the ultimate outcome of many tests. Elwood Consolidated Oil Company's Rekar 1, in the Goleta district, has again tested wet at 3430 feet and probably will be deepened. F. G. Anderson's Langman 1 also failed on a production test and will be deepened from 3415 feet. Olympic Oil and Refining Company's Palisades 1 flowed gas on a recent test at 2440 feet and is now shut in, pending the signing of additional leases. Near Santa Barbara the Bankline Oil Company has abandoned Duncan Ranch 1 at 4290 feet, while Pacific Western Oil Company has staked a location on Parcel 1. Excitement at Carpenteria has completely died down, following the suspension of operations at Continental Oil Company's Franklin 1 at 4130 feet. The company is drilling at 1000 feet in Bailard 1, nearby.

Elwood

Santa Barbara, Calif.—Gradual elimination of outpost tests near the Elwood field has left only three active operations, and of these only one seems to have more than a remote chance of obtaining production on the main structure. Located from two to four miles from production, the several wildcats started during the past year were drilled on the theory that the field might take an unexpected turn.

Barnsdall Oil Company and Rio Grande Oil Company are drilling at 5450 feet in Elwood Community 1, located about one mile northeast of production, after a series of tests below 5000 feet.

Tulane Lake

Bakersfield, Calif. — The Dudley Ridge Syndicate's well on Section 12-23-19, near the old shore line of Tulane Lake and about 16 miles southeast of the discovery well in the Kettleman Hills field, continues to blow wild at the rate of 30 million cubic feet of gas daily, with no oil, from 1305 feet. The importance of the strike has not been ascertained, and opinion is divided as to whether the well is producing marsh gas or ordinary dry gas. Located in a general area which has produced gas for several years, the well may prove to be an extension of a shallow district several miles to the east.

Tulsa.—Independent Oil & Gas Company's Banks-Teague 1, NWc Section 6-16-27w, in Madison County, northwestern Arkansas, is fishing for tools at 1462 feet in lime and has a hole full of water.

News From Rocky Mountain Fields

Byron Lake

Byron, Wyo.—Cross Gas Company has apparently made a very interesting discovery in its wildcat test on Byron Lake structure in the lower Sundance sand. Byron Lake is about four miles east of Garland Dome, in Big Horn County, Wyoming. The bit entered the Sundance formation with the hole full of water, but the oil came up to the top, indicating, it is believed, that the well will be a good producer. The oil is heavy and black. A test of the production will be made as soon as the water shutoff is effected.

Montana Wildcat

Great Falls, Mont.—The United States Petroleum Company wildcat well about 6½ miles northeast of Great Falls has a good showing of oil and has created considerable excitement in oil circles hereabouts, as it apparently proves that the Black Horse Lake structure is closed, contrary to a theory previously held. Oil was found at 1150 feet in a white lime formation. Casing must be run before a test of the production can be made. The hole is said to be full of crude.

Frannie Structure

Frannie, Wyo.—Midwest Refining Company is completing the second producing well in the new Frannie field, northern Wyoming, in the No. 1 Kirk-Peters which was drilled, according to Julius C. Peters, president, for the account of the Summit Oil Company. The well is bottomed at 2810 feet and has several hundred feet of oil standing in the hole. The Summit Oil Company is backed by the Book interests of Detroit.

Storing Crude

Casper, Wyo.—A reserve for their refineries at Casper is being built up by The Texas Company and White Eagle Oil & Refining Company who are storing several thousand barrels of crude per day in the tankage recently taken over from the naval reserve at Teapot Dome. At present two 64,000-barrel tanks and two 55,000-barrel tanks are filled, and there remain four 80,000-barrel tanks yet to fill. Upon the completion of the runs the refineries will have a half million barrels of high grade oil in reserve.

U. S. Plugging Wells

Casper, Wyo.—U. S. Geological Survey, mineral leasing division, located at Casper, is asking for bids for work necessary to plug and abandon wells on the public domain. There are a number of wells in the Mountain States on which this work has not been done, according to Department of the Interior regulations, and some of these are causing considerable damage in water sands. The work will be started not later than June 30.

Kemmerer, Wyo. — Midwest Refining Company has assumed management of the gathering lines in the LaBarge oil field, southwestern Wyoming, and has abolished the 10-cent gathering charge which has prevailed there.

Vernal, Utah. — Gas franchise for Vernal and the two producing gas wells near this town were recently purchased by Ray Phebus and Paul Stock of Thermopolis, Wyoming, from Casper men. The new company will lay a line to Vernal to supply about 400 meters, most of which are domestic.

Artesia, N. M.—It is reported here that the Marland Production Company will announce locations for six new wells to be drilled in Lea County this season. At present this company, which a few months ago was the most active operators in the county, has no drilling wells under way.

Artesia, N. M.—Gypsy Oil Company has made location on the Naomi Humphreys land for an offset to the Skelly Oil Company's Joyner 1, which is shut in with an estimated production of 1000 barrels per day of 35 gravity crude. A substantial part of the Joyner production was encountered in horizons below the sulphur water level.

Calgary, Alta., Can.—Oil & Gas Association of Alberta was recently formed here with this city as its headquarters. The Rocky Mountain Oil & Gas Association is the model after which the new organization has been formed, and 25 men prominent in the industry in the province compose the board of directors.

California Bill Passes House

Sacramento, Calif.—The bill to prevent the wastage of natural gas has passed the house and is expected to pass the senate with little difficulty. Although chiefly meant to check the over-production of oil, the bill will be the direct cause of saving perhaps several billion cubic feet of gas within the next few years. Enough gas has been wasted during the past 10 years to supply a city the size of San Francisco for several years. This great waste appears much worse after it has occurred than during the actual period of wastage. The hope that many cities not now receiving gas will be supplied has been expressed by supporters of the bill.

Long Beach, Calif.—Starting off at a 5200-barrel rate, Delaney Oil Corporation's Wellington 3 was reminiscent of the old days at Long Beach and went on record as the largest well finished for several months. Completed at 7072 feet the well showed all the life of the older completions. The oil was 30.2 gravity and showed a cut of only two-tenths of one per cent. Several other wells were completed during the week but the total initial production was less than 1000 barrels.

Pending California Law Legalizes Curtailment Agreement.

(Continued from page 30)

although you, as engineers and operators, know very well there is very little likelihood that that field will last long enough to pay out that additional investment. If all these grand moguls in the government and American Petroleum Institute, instead of clucking around about unlaid eggs, would go back and bring pressure on the bankers to stop these unreasonable advances for the purpose of developing a product which is not needed, which is not a source of profit, but which is an expense to handle, I venture to say the while over-production problem would be cured within six months, and when the production got within reasonable hailing distance of the consumption, then it would be a fair and decent and reasonable investment to put some more money into the oil industry.

There are certain bankers who pay absolutely no attention to the ultimate outcome of these ventures. This does not apply to all; it does not apply to the majority. The majority of the bankers—what I mean by that is investment bankers who sell securities, bonds or stocks—look to the assets behind those securities to see there is not only a decent income, but that the principal will be paid out by the time the investor should have his money back. But unfortunately, there are a lot of others and those others, if they can buy escurities at 90 and sell at 100, step out of the picture and it is a matter of complete indifference to them whether the investors get their money back or not. If there could be a proper campaign of education agreed on along those lines to stop this unreasonable, unnecssary investment in oil wells and refineries and pipe lines and in other accessories at this time, I think all the trouble of the oil industry would be eliminated for a little while, anyway; at all events, the boy would stay home at night for a short time."

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Safe Operations of Air & Gas Lifts

(Continued from page 36)

A few general suggestions which may be applied to either gas engine or electric stations is tabulated herewith:

Care should be taken to keep all gas compressor packing glands adjusted to prevent leaks.

Magneto wires should be securely fastened so they cannot jar loose and cause an ignition leak or create a spark. Magneto terminals should never be removed to stop an engine or while the engine is running. A spark of sufficient strength to ignite combustible vapors may result between the terminal and the spark plug or between the terminal and the base of the engine.

The preceding instruction holds true in attaching magneto terminals to a gas engine in motion.

Keep a constant check for gas leaks on all gates or valves, cylinder gaskets, and line fittings.

Where it is necessary to place boilers at all near gas compressors, a firewall should be built to divert away from the boiler fires any gas that might escape from the compressors.

Use only vapor-proof electric lighting equipment such as vapor-proof globe covers, wiring in conduit, etc.

Install all switches and fuse boxes, even though vapor-proof, outside the compressor room.

Provide ventilation that will remove the gases that may accumulate and especially the heavy gas from near the floor.

Preventing Fire

The problems of preventing fire and explosions may be summarized as:

Preventing gas leaks and explosive mixtures.

Keeping sparks or flame out of the possible gasified area.

Proper ventilation to dissipate gas that may escape and otherwise form combustible mixture.

THE FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Sell Thermometers, Hydrometers and Laboratory Glassware.
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Imperial Royalties Company
Established April, 1920
Will pay the usual monthly dividend of 1½% on its $1.00 par Preferred shares on May 31st. This is Dividend No. 104 and makes a total of 176½% paid to Preferred shareholders. Also, a monthly dividend of 18 cents a share will be paid on its Class A Preferred Shares on May 31st.
E. S. HORN — H. O. BLAND
J. E. HORN
Trustees
Hunt Bldg., Tulsa, Okla.

NOTICE!

The Terrebonne Parish School Board invites bids for the mineral rights on 32 school sections of approximately 640 acres each. These sections are located in Terrebonne Parish (County), Louisiana.

All bids must cover all of the said 32 sections, must be addressed to the undersigned at Houma, Louisiana, and must reach him not later than at 10 o'clock on the morning of May 18, 1929.

A. R. VIGUERIE, *President*
Terrebonne Parish School Board

Coastal Oil Finding Company
Contracts taken for Torsion Balance Work
Esperson Bldg., Houston, Texas
Phone Fairfax 4383

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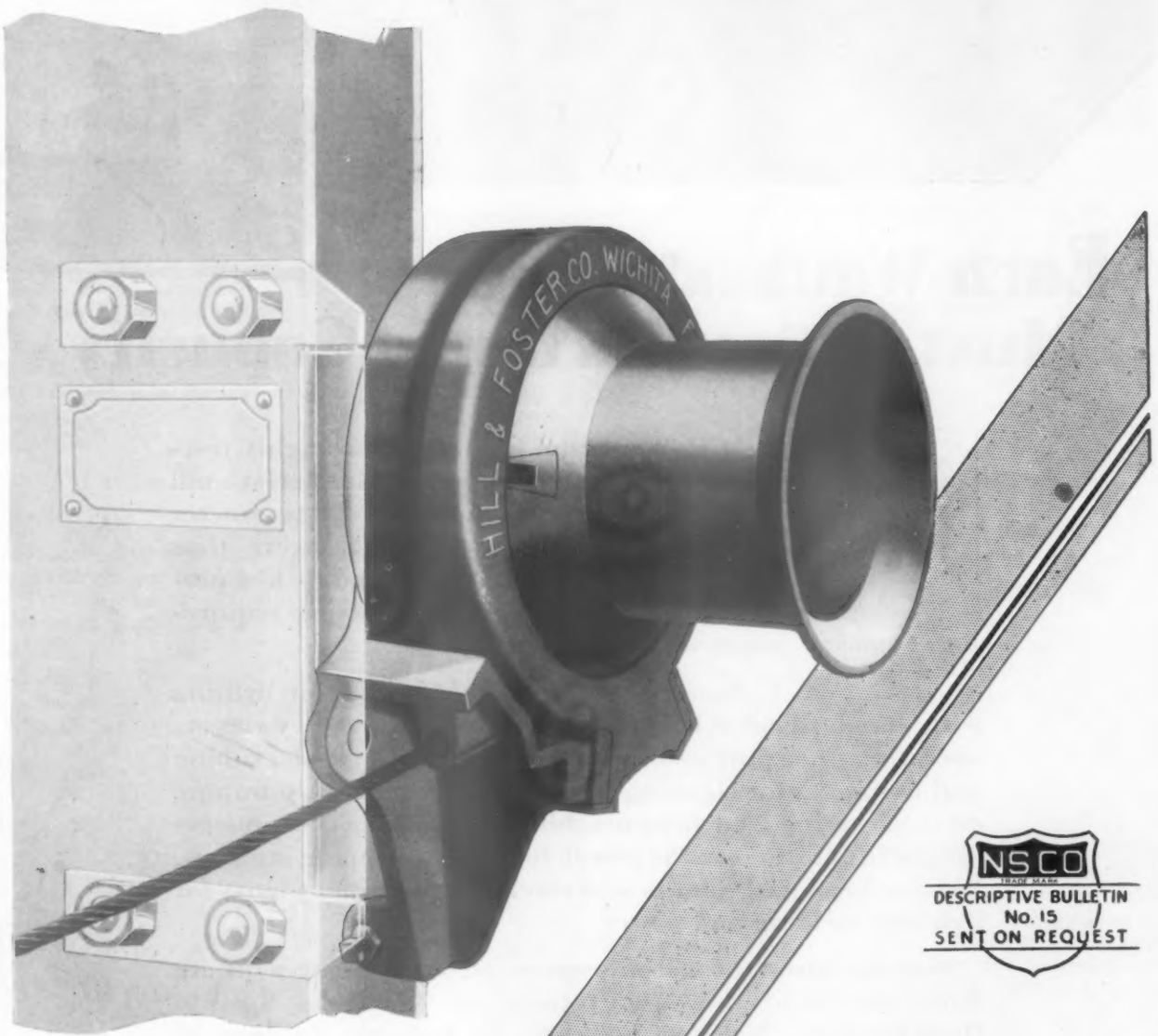

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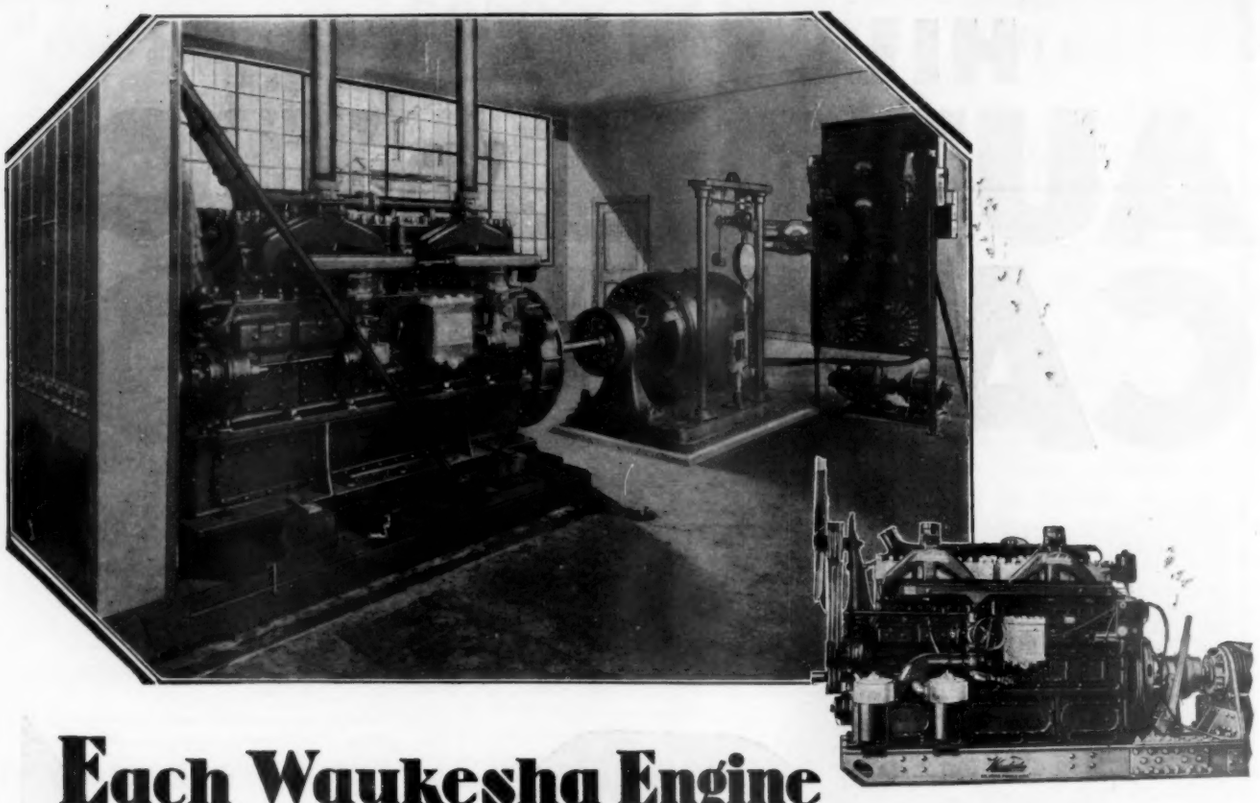
DESCRIPTIVE BULLETIN
No. 15
SENT ON REQUEST

THE
NATIONAL SUPPLY
COMPANIES

Say you saw it in The OIL WEEKLY



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EACH Waukesha Engine is thoroughly tested before being shipped. The latest and most accurate type of cradle dynamometer and other precision equipment insure that every engine sold will meet its published performance . . . every oil field service requirement within its power range.

Sizes up to 275 hp. are used for drilling with standard cable tool rigs . . . drilling with rotary rigs . . . operating mud pumps on rotary rigs . . . pulling rods, tubing and casing . . . for cleaning and swabbing wells . . . pumping oil . . . powering trenching machinery . . . driving compressors for gas lift stations . . . as power for water pumping stations, "casing head gas" plants and electric generation plants for lighting, welding and power.

Manufacturers of gasoline-powered equipment who are most careful of their reputation use Waukesha Ricardo Head Engines. Write for booklet. Oil Industry Equipment Division, Waukesha Motor Company, Waukesha, Wisconsin. Offices: New York, Tulsa, Houston, San Francisco.

942

WAUKESHA RICARDO HEAD ENGINES

Say you saw it in The OIL WEEKLY

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Double Drum Master Winch

W-K-M- COMPANY, INC.

The W-K-M Company, Houston, has recently developed a new addition to its line of oil field winches to be operated especially on scattered leases. This machine is a double drum master winch, and is available in a 68 horse power model.

The upper drum of the machine is designed for spooling a bailing line, an dis suitable for high speed work. The lower drum, mounted on Timken tapered roller bearings, is for spooling the tubing line. Both drums have three speeds forward and reverse, instantly selective through a heavy duty Cotta transmission. All controls are arranged for operation almost exactly as an automobile is operated.

The unit is mounted on heavy steel skids, and is designed to be transported on the platform of a truck, or an Athey truss wheel wagon. This method of mounting affords extreme portability, and enables the owner to handle wells on widely scattered leases. Wells may be pulled while the machine is mounted on the truck, or the unit may be skidded to the ground and operated therefrom.

Exceptionally heavy construction, and the incorporation of dozens of exclusive features which have been developed and perfected on earlier machines manufactured by the W-K-M Company, assure high quality performance for the new double drum master winch.

Complete specifications and prices will gladly be furnished those interested upon inquiry to the W-K-M Company, at Houston or to any of the company's district representatives.

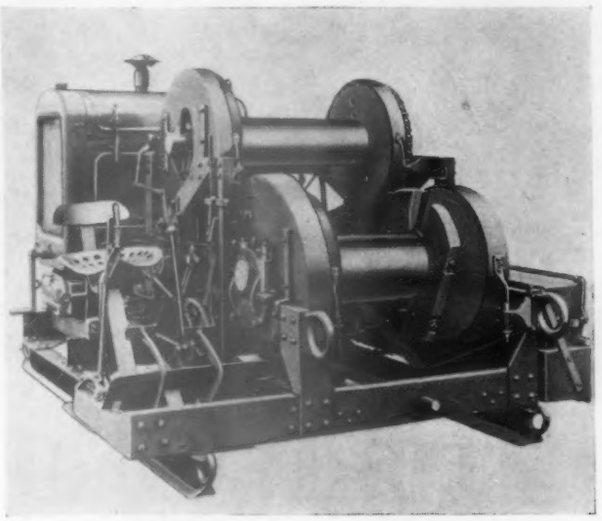
Little Model F Backfiller

BUCKEYE TRACTION DITCHER COMPANY

Among the recent interesting developments in construction equipment is the Model F Backfiller, built by the Buckeye Traction Ditcher Company, Findlay, Ohio, a product representing a miniature of Buckeye Backfiller Models D and O.

It is built for economical and rapid service and incorporates proportionately the working abilities of the larger models. It is powered with a four-cylinder, medium speed,

Buckeye Model F Backfiller



W-K-M Double Drum Master Winch

heavy duty motor of standard manufacture and twin disc clutch.

The boom has a swinging range of 160 degrees. Brakes of sizeable dimensions, attached directly to its twin full length alilgator (crawler) traction wheels, provide for safe operation on steep grades and, as each wheel is independently driven, the unit can turn completely around on its own length.

The operating levers have been conveniently arranged for efficient one-man control. The boom is telescopically adjusted and controlled by hand wheels through worm- and-gear mechanism from the operator's platform for both elevation and working angles.

Drilling Clamp

CHARLES A BUTLER MANUFACTURING COMPANY

Charles A. Butler Manufacturing Company, Okmulgee, Oklahoma, has recently introduced a new 24-inch drilling clamp, thus adding to its line of equipment a larger clamp. Experience of this company in manufacturing the 14-inch clamp has found, especially in recent months, a wide demand for the increased size clamp.

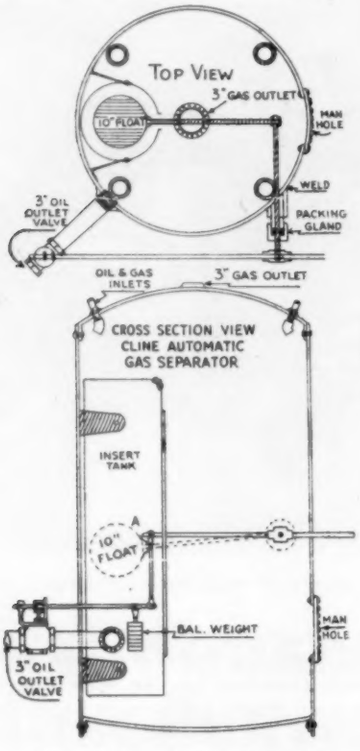
This new clamp is made of electric steel, is of deep channel construction eliminating all spring, making the clamp strong for its size and quick in action. The Tee screw is made with a square thread to lengthen the life to that of the clamp itself. The tee screw nut is taper fitting into a tapered seat in the swivel block for knocking out and replacing in a few minutes without dismantling the clamp. The links are held in place by two bolts and may be removed quickly, making the clamp light and easy to handle for moving in a car.

The manufacturers guarantee replacement of any part defective in either material or workmanship upon receipt of such part at their plant. They advise their customers to send the clamp to the factory for complete overhauling or replacements in case of wreckage by fire or otherwise. Part of the company's service is reworking the product to its former new condition at the least possible cost in case of destructive work by fire or other wreckage.

The gripping power of this new 24-inch clamp is rated

at 280,000 pounds with the 24-inch gripping surface on the cable.

A folder recently published by the company describing this new product, with other equipment, is available upon request to the company at the above address.



Cline Automatic Gas Separator

Automatic Gas Separator

WESTERMAN BROTHERS BOILER & TANK WORKS

A new oil and gas separator now being marketed is the product of Westerman Brothers Boiler and Tank Works, Bremen, Ohio, who acquired the exclusive manufacturing rights from William Cline, the inventor of the product. In turn the manufacturers have given National Supply Company the distribution of the separator.

Cline Automatic Gas Separator, for which patent has been applied, allows a certain fixed pressure to be maintained at all times, either for flowing or pumping wells, so the gas can be marketed. The product relieves any over pressure of oil or gas automatically.

All working parts except the float are on the outside to allow for cleaning and replacing of new valves and other parts. The standard traps are in two sizes: 36-inch diameter, 72 inches high, three-inch oil outlet, three-inch gas outlet, and 950 pounds; and of 48-inch diameter, 96 inches high, four-inch oil and four-inch gas outlet and 2200 pounds.

Illustrated here are the top and cross section views.

More detailed information may be had by writing the manufacturers at Bremen, Ohio.

Prometheus, U. S. A.

Beginning with the tales of fire as they are chronicled in myths, legends and the history of its uses down through the ages, Mr. Greenwood considers at length the modern methods of uses of fuels and their relative merits in industry and home. He has collected a large amount of material on oil, gas and electric light and power and has been able to sketch the picture of the distribution of these agencies for their multitudes of present-day employments. Of coal, the author says in part, "to coal goes the credit for building the very foundations of American industry and it will be a long, long time before it is entirely replaced by oil."

A chapter devoted entirely to petroleum contains much interesting material and points out that the potential supply of oil, as well as sources of obtaining oil, such as lignite and shale, assures, for many years to come, an adequate supply of this essential natural resource. The gas industry is also discussed at length, citing instances of its early discovery and the difficulties that attended its commercial introduction in the last century in England and America. A considerable amount of statistical information about the gas industry is included in this chapter.

The author presents a number of interesting angles concerning the advent of automatic heat, with particular reference to the oil burner and the modern gas heater. His conclusions show that automatic heating occupies a permanent place in modern domestic life and will continue to become more popular in the future. "Prometheus" is easy to read and is a welcome addition to the library of popular books dealing with industrial America.

The New York City offices of the American Chain Company were recently moved from Grand Central Terminal Building to The New York Central Building, 230 Park Avenue. The Pittsurgh offices of the same company were also moved, to 701-705 American Bank Building.

Wright Manufacturing Company has recently moved its New York City offices to new quarters in The New York Central Building at 230 Park Avenue.

The E. H. Edwards Company, manufacturers of wire-line rope, San Francisco, announces opening of a branch office in Houston, 802 Walnut Street. The Gulf Coast office, according to Lester R. Leiber, factory representative, will carry a complete line of oil field ropes.

Lothrop Made Timken President

M. T. LOTHROP

At a meeting of the board of directors of The Timken Roller Bearing Company, May 7, Marcus T. Lothrop was elected president, succeeding H. H. Timken, who becomes chairman of the board. Other officers elected were W. R. Timken, J. G. Obermier, J. W. Spray, T. V. Buckwalter, and H. J. Porter, vice presidents, and J. F. Strough, secretary-treasurer. Another of the company's old-timers who has been advanced is Judd W. Spray, vice president and general sales manager, who was made one of the directors at the recent annual stockholders meeting. All of the previous members of the board of directors were re-elected, including H. H. Timken, W. R. Timken, J G. Obermier, M. T. Lothrop, and J. F. Strough. Another newly elected director is A. C. Ernst of Cleveland.

Mr. Lothrop started with The Timken Roller Bearing Company in 1911, as metallurgist, and for the past 18 years has been connected with its affairs, being closely associated with H. H. Timken. During that time he has occupied various capacities successively, in metallurgy, research, in charge of operations, and, for the last few years as vice president and general manager in charge of all operating and sales.

Mr. Spray has been with the company for 14 years in various capacities, having been Detroit sales manager until 1926, after which he was general sales manager until 1928. At that time he was made vice president in charge of sales.

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"Nobs"

SOFT—BUT ENDURING
FOR PUMPING HOT LIQUID,
OIL, SALT WATER, ETC.

"Wear Like a Hog's Nose"

DRAGON MANUFACTURING CO.
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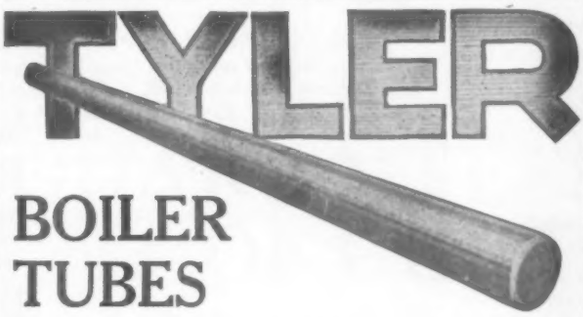

BOILER TUBES Resist corrosion—

whether it is charcoal iron tubes for bad water conditions or lap-welded steel tubes for good water conditions—Tyler Boiler Tubes will give *lasting* satisfaction.

All tubes are made to A.S.M.E. Code Requirements.

Request full details

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WASHINGTON, PA.

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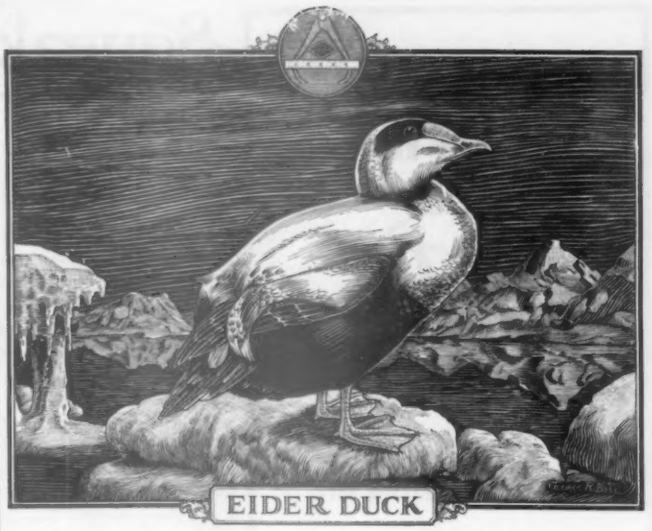
Harrisburg Supply Company, Tulsa, Oklahoma.
Johnson-Peter Company, Brooklyn, N. Y., Pittsburgh, Pa.
A. M. Castle & Co., Chicago, Seattle, Washington, San Francisco, Cal.; Los Angeles, Cal.
The Bourne-Fuller Company, Cleveland, Ohio.
Lukens Steel Company, New Orleans, La.



LONGEVITY

A characteristic of the Eider Duck and also of the products manufactured by The Garlock Packing Company, Palmyra, N. Y.

RESIDING in the Arctics and visiting our Northern Atlantic Coast only in winter, the Eider Duck is able to keep to the open sea during the most severe zero weather. He is as much at home in the water as a fish and in spite of Arctic storms has a remarkably long life. One pair of Eiders were observed to make their nest in the same place for twenty years and it is believed these birds often live more than a hundred years.

Garlock Mechanical Packing is also noted for its long life and resistance even under adverse conditions. Being built up to a recognized value and not down to a price, it is known throughout the world as The Standard Packing by which all others are judged.

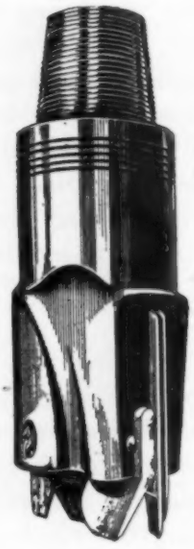
Where long economical packing service is desired the Initial Price should never be considered. The real value of the packing can be measured only by the final cost reckoned in terms of the longevity of the installation.

1000 feet—11″ hole
40 hours—cost
3c per foot

K-P
THE LINE OF LEAST RESISTANCE

STRAIGHT HOLE
Rotary Drilling Bit

—made this speed and low cost record. A 1000 feet of 11″ hole in 40 hours, passing another well by 100 feet that was started 5 days previously, is the record made by the Klingensmith Drilling Company at Pearson Switch, Okla., with three sets of K-P self-sharpening cutters in a K-P *Straight Hole Bit. This thousand feet cost Klingensmith only $30.00 for K-P self-sharpening cutters.* The total footage was made in three round trips.



KENNEDYE-PLUMB CORPORATION
Railway Exchange Bldg.,
ST. LOUIS, MO.

Sold by every
"Continental" — "National" —"Oil Well" Supply Company Branch Store.

Squeaks from the Bull Wheel

"Well, well, well!" cried Mrs. Henpeck. "Our son is engaged to be married. We will write to the dear lad and congratulate him."

Mr. Henpeck had to agree, so the lady picked up her pen and wrote:

"My darling boy, what glorious news! Your father and I rejoice in your happiness. It has long been our greatest wish that you should marry some good woman. A good woman is heaven's most precious gift to man. She brings out all the best in him and helps him to suppress all that is evil. Her price is above rubies."

And then the son found this postscript in a different handwriting:

"Your mother has gone out for a stamp. Stay single, you damn fool."

They're picking up his pieces
With a dust-pan and a rake,
Because he grabbed a silken knee
When he should have grabbed the brake.

"What's the difference between Chicago and New York?"

"I don't know, what is the difference?"

"In New York it's 'I Fall Down and Go Boom!' and in Chicago it's 'Boom! and I Fall Down'."—*Socony Flash.*

An old lady was walking by the creek and came upon several boys bathing in their birthday suits.

"Boys," she exclaimed, "is it not against the law to go bathing without a bathing suit?"

"Yessum," they replied, "but come on in; we won't tell on you."

"Do you know how to make a peach cordial?"

"Sure, send her some candy."

Abie: "Vot is the idea of raising the prices of gasoline all the time?"

"What do you care? You haven't a car."

"No, but I got a cigar lighter."

Instructor: "Explain what osculation is."

Student: "It is the touching of lips as a mark of affection."

Instructor: "Sit down! You've never met anyone but relatives."

The sun had long since sank or sunk,
The moon had rose or risen.
He slowly put his hand in hern
'N she put hern in his'n.
He said, "We'll live as cheap as one."
She smiled 'n said she'd try it.
They're married now, but one of 'em
Is always on a diet.—*Pure Oil News.*

She: Can I entertain you in any way, shape or form?

He: Well, the last two methods sound promising.

What book are you reading?
It's called A Pair of Tights.
Who's it about?
Two Scotchmen.

"I've discovered the cause of 100 per cent of all divorces."

"Remarkable, and what is it?"

"Marriage."

"Did you hear of the death of our 'bridge' friend?"

"No. What happened?"

"They buried him with 'simple honors'."

"Spent my vacation up in the mountains."

"Really. Did you have a guide?"

"Well, only my conscience."

An old New York farmer attended a big picnic at Binghamton and stayed over to watch the dancing at night. He hadn't been out in the world much, and he was deeply impressed with the girls' clothes at the dance.

"Some of the ladies' clothes I see here," he said, "plumb puts me in mind of a barbed wire fence."

Somebody asked him why.

"Well," he said, "it's this way—they appear to protect the property without obstructin' the view."

"Say, old fellow, I wish you wouldn't keep on kissing my wife. Once when you come and once when you go is enough."

"Impossible!" exclaimed Jenkins indignantly. "You can't expect me to keep coming and going just to please you!"

"Do you know what Ford is figuring on now?"

"No, what?"

"Paper!"

"Irene!"

"Yes, mother."

"The clock has struck '12' three times, now let it practice on 'one' for a while."

"Can't you see the sign 'No Smoking'?"

"Sure mate, that's plain enough. But there are so many dippy signs here. One says, 'Wear Brown's Corsets.' So I ain't payin' attention to any of them!"

"Johnny, who was the first man?"

"George Washington was the first man—first in war and first in peace."

"No Johnny—Adam was the first man."

"Speaking of foreigners, I suppose he was."—*Magnolia Oil News.*

"Hullo, Bill! How's your wife this evening?"

"She's sinking."

"What, is she ill?"

"No. Just washing dishes."

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
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WAX — PETROLEUM COKE
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Say you saw it in The OIL WEEKLY

INDEX TO ADVERTISERS

J. S. Abercrombie Company 9
Acme Fishing Tool Company..... 84
Ajax Iron Works .....
Alco Oil Tools Company.....
Allis-Chalmers Manufacturing Co.....
Alten's Foundry & Machine Works....
Aluminum Company of America..... 8
American Association of Petroleum Geologists .....
American Cable Company .....
American Hammered Piston Ring Co...
American Telegraph & Telephone Co...
American Steel Works 86
American Well Works 84
Andrews Steel Company 100
B. K. Appleman .....
Paul Arbon Company .....
Ash Grove Lime & Portland Cement Company .....
Athey Truss Wheel Company.....
Axelson Machine Company 23

Baash-Ross Tool Company.....
Baker Oil Tools, Incorporated.....
Baldwin Chain Company.....
Barber-Green Company .....
William S. Barnickel & Company.....
Bartlett Hayward Company.....
Bartlesville Supply Company .....
Beaumont Iron Works 19
Beebe Brothers 108
Bessemer Gas Engine Company.....
Bethlehem Steel Company .....
F. O. Blake .....
Boykin Machinery & Supply Company .....Third Cover
Braden Steel Corporation .....
The Brewster Company 25
Bridgeport Machine Company .....
Broderick & Bascom Rope Company..
Buckeye Traction Ditcher Company...
Buffalo Bolt Company .....
Burns Tool Company .....
Butler Manufacturing Company.....
A. M. Byers Company .....
Byron Jackson Pump Co. 67

Cambridge Instrument Company .....
Cameron Iron Works .....
Phillip Carey Company .....
Central Alloy Steel Corporation.....103
Chain Belt Company .....
Chicago Bridge & Iron Works..... 22
Chicago Pneumatic Tool Company.....
Clark Brothers Company 6
Climax Engineering Company.....
Coastal Oil Finding Company.....114
Colona Manufacturing Company.....
Columbia Nut & Bolt Company.....
Continental Motors Corporation.....
Continental Supply Company 46
Cooper-Bessemer Corporation 40-41
C. & G. Cooper Company.....
Fred E. Cooper .....
Crescent Belt Fastener Company.....
Curtis & Curtis Company.....
Cyclone Fence Company.....100

D. & B. Pump Supply Company..... 51
Darling Valve & Manufacturing Co.... 18
E. M. Dart Manufacturing Company.. 84
Diamond Drill Carbon Company..... 88
Disc Bit Division Byron Jackson Company 67
Dragon Mfg. Company 119
Drane-Humphrey Company, Inc. .....
S. R. Dresser Mfg. Company.....
The Drillometer Company .....
Dunn Division, Byron Jackson Co..... 67

E. I. du Pont de Nemours & Co., Inc. .....Second Cover
Economy Pump & Oil Tool Company..
E. H. Edwards Mfg. Company.....111
Electric Controller Mfg. Company..... 20
Elliott Core Drilling Company.....
Emsco Derrick & Equipment Co.....

Fenwick-Reddaway Mfg. Company....
Fort Hayes Hotel .....
Fort Worth Laboratories 114
Franklin Valveless Engine Company.. 87
Frick-Reid Supply Corporation.....109

Garlock Packing Company.....119
Gardner-Denver Company .....
Gaso Pump & Burner Mfg. Co..... 3
General Electric Company..... 24
B. F. Goodrich Rubber Company.....

H. P. Gott Manufacturing Company... 88
Gray Tool Company .....
Great Northern Hotel .....
Green, Tweed Company .....
Guiberson Corporation 45
Gulf Publishing Company .....
Gulf Refining Company.....121
Gulf States Utilities Company.....

Halliburton Oil Well Cementing Company 4
Erle P. Halliburton Company.....
Hardway & Cathey 114
Haynes Stellite Company 97
Harrisburg Pipe & Pipe Bending Company .....
Harrisburg Pipe & Pipe Bending Company of Texas .....
Hazard Wire Rope Company.....
Hercules Motors Corporation.....
Hercules Supply Company .....
Hercules Tool Company .....
Heydrick Mapping Company 114
Hill, Hubbell & Company.....
Hinderliter Tool Company.....
Hirsch, Brown & Susman.....114
Charles N. Hough Mfg. Company..... 84
Howard Smith Company.....
Houston Engineers .....
Houston Pipe Line Company .....
Hughes Tool Company.....Fourth Cover
Humble Oil & Refining Company.....
Hyatt Roller Bearing Company.....

Imperial Royalties Company 114
Ingersoll-Rand Company .....
International Cement Corporation.....
International Derrick & Equipment Co. .....Front Cover
International Supply Company.....
Interstate Trust & Banking Company..

Jarecki Manufacturing Company..... 12
Jensen Brothers Manufacturing Co..... 98
S. M. Jones Company..... 17
Jones & Laughlin Steel Corporation... 89

Kelly-Dempsey Company .....
Kennedye-Plumb Corporation 120
Kerotest Manufacturing Company..... 83
Keystone Pipe & Supply Company..... 88

Landis Machine Company.....
Larkin & Company .....
Layne & Bowler Company..... 71
LeBus Rotary Tool Works .....
Robert E. Lee Hotels.....
Lincoln Electric Company..... 14
Linde Air Products Company.....
Link-Belt Company .....
Lone Star Gas Company.....
Lucey Products Corporation.....107
Ludlow Valve Mfg. Company.....

MacClatchie Mfg. Company .....
Maintenance Engineering Corporation..110
J. H. McEvoy & Company.....
Maloney Tank Manufacturing Co..... 82
McCollum Exploration Company.....114
Martin-Loomis Corporation .....
Martin Wagon Company .....
Mason Regulator Company .....
Metric Metal Works 15
Miller Combination Bailer & Pump Company 110
Robert J. Miller Company.....
Mission Sales Company 76-77
Missouri Portland Cement Company... 10
Lee C. Moore & Company.....Insert
Munger Oil Information Service.....114
Murray Brooks Hardware Company...
Murray Tool & Supply Company.....

National Petroleum Engineering Co... 86
National Supply Companies 115
National Tank Company.....
National Transit Pump Machine Company .....
National Tube Company .....
New Jersey Asbestos Company.....
Norris Brothers .....
Norvell-Wilder Hardware Company.... 90
R. D. Nuttall Company .....
Nye Tool & Machine Works..... 7

Oakite Products, Inc. .....
O'Brien Steel Construction Co.....
O. C. S. Manufacturing Company..... 86
Oil Well Supply Company..... 28
Oil Tool Division Byron Jackson Co... 67
Oklahoma Gas & Electric Company....
Oxweld Acetylene Company .....

Parkersburg Rig & Reel Company..... 26
Patterson-Ballagh Corporation 62
Pattin Brothers Company..... 16
Peden Iron & Steel Company..... 81
Penberthy Injector Company 43
Petroleum Engineering University ....
Petroleum Rectifying Company.....
Pittsburgh Des Moines Steel Co.....
Pittsburgh Equitable Meter Company..
Pittsburgh Steel Products Company...
Pittsburgh Valve, Foundry & Construction Company .....
Pratt & Whitney Company 100
Price, W. Armstrong .....

Reading Iron Company .....
Reed Roller Bit Company.....
Reagan Forge & Engineering Company
Joseph Reid Gas Engine Company.... 5
Republic Supply Company.....
Republic Iron & Steel Company.....
Rhodes Master Packing .....

Safety Pulling Machine Company.....
Shaffer Specialty Company .....
Shaffer Tool Works .....
Sheldon Machinery Corporation .....
Sinclair Refining Company 52
Skelly Oil Company .....
S-K-F Industries .....
A. O. Smith Corporation .....
Smith Separator Company .....
H. C. Smith Manufacturing Company.. 21
Howard Smith Company .....
South Chester Tube Company.....
Southern Blue Print Supply Co.....
Southern Engine & Pump Company... 94
Southern Mill & Manufacturing Co....
Southwest Air Fast Express, Inc..... 93
Spang & Company .....
Spang Chalfant & Company..... 11
Springfield Wagon & Trailer Co.....
Standard Supply & Hardware Co.....
Stanley Belting Corporation.....
Star Drilling Machine Company..... 80
Jesse R. Stone 114
Sweetwater Board of City Development
Sullivan Machinery Company.....

Templeton, Kenley & Company.....112
Texas Creosoting Company .....
Texas Cyclone Fence Company.....
Texas Louisiana Power Co. .....
Texas Power & Light Company.....
Texas Sand & Gravel Company.....114
Timken Roller Bearing Company.....105
Titusville Iron Works .....
Triad Products Company .....
Trimont Manufacturing Company .....
Trumble Gas Trap Company.....
Twin Disc Clutch Company.....
Tyler Tube & Pipe Company.....119
Underwood Typewriter Company.....114
Union Carbide & Carbon Corporation..
Union Wire Rope Corporation.....
United Gas Co. .....
United Iron Works .....

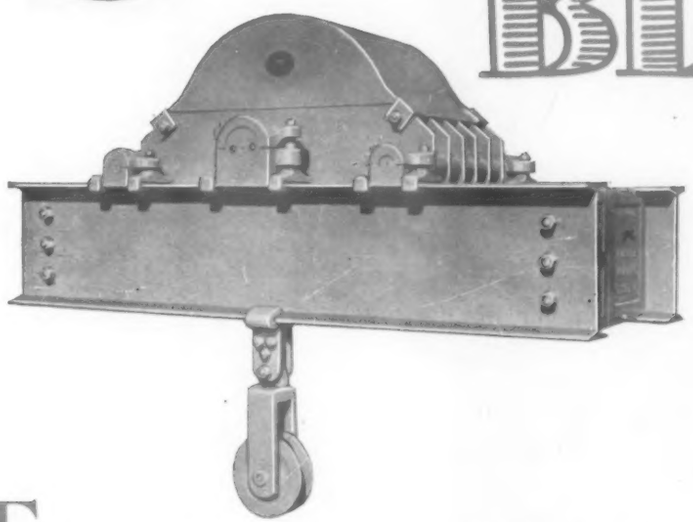
Victaulic Company of America..... 13
The Vez Company 59
A. R. Viguerie 114

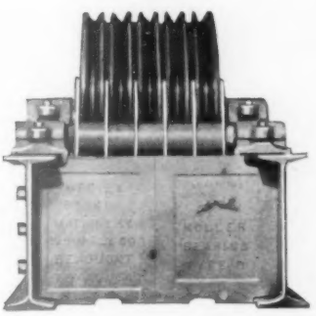
Waukesha Motor Company.....116
John F. Weinzierl 114
Westinghouse Electric & Manufacturing Company 99
Wichita Falls Motors Company.....
West Texas Utilities Company.....
Wickwire-Spencer Steel Company .....
Wico Electric Company.....
Wiemann-Kemmerer-Wright, Inc. 85
J. H. Williams & Company.....
Wiliamsport Wire Rope Company.....
Wilson Oil Tools Corporation.....
Wilson-Snyder Manufacturing Co.....
Wilson Supply Company .....
W-K-M Company .....
Word Specialty Mfg. Company..... 79
Wright Manufacturing Company .....
Wyatt Metal & Boiler Works.....

Yale & Towne Manufacturing Company .....
Young Engine Corporation .....
Zero Hour Torpedo Co. 55

The pendulum of popularity
Swings steadily toward the

BOYKIN "Type D" CROWN BLOCK





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The compactness, rigidity, sturdy construction, and superior service of this block is rapidly winning more and more satisfied users. They like its five extra large sheaves;—its smooth running; perfect alignment; its ease of handling and American heavy duty roller bearings.

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The Boykin Type "D" Crown Block was made as a companion to the famous Boykin 5 Sheave Traveling Block, and when the two are used in combination, as they should be, there is nothing that can equal them, for speed, power, durability and ease on wire lines.

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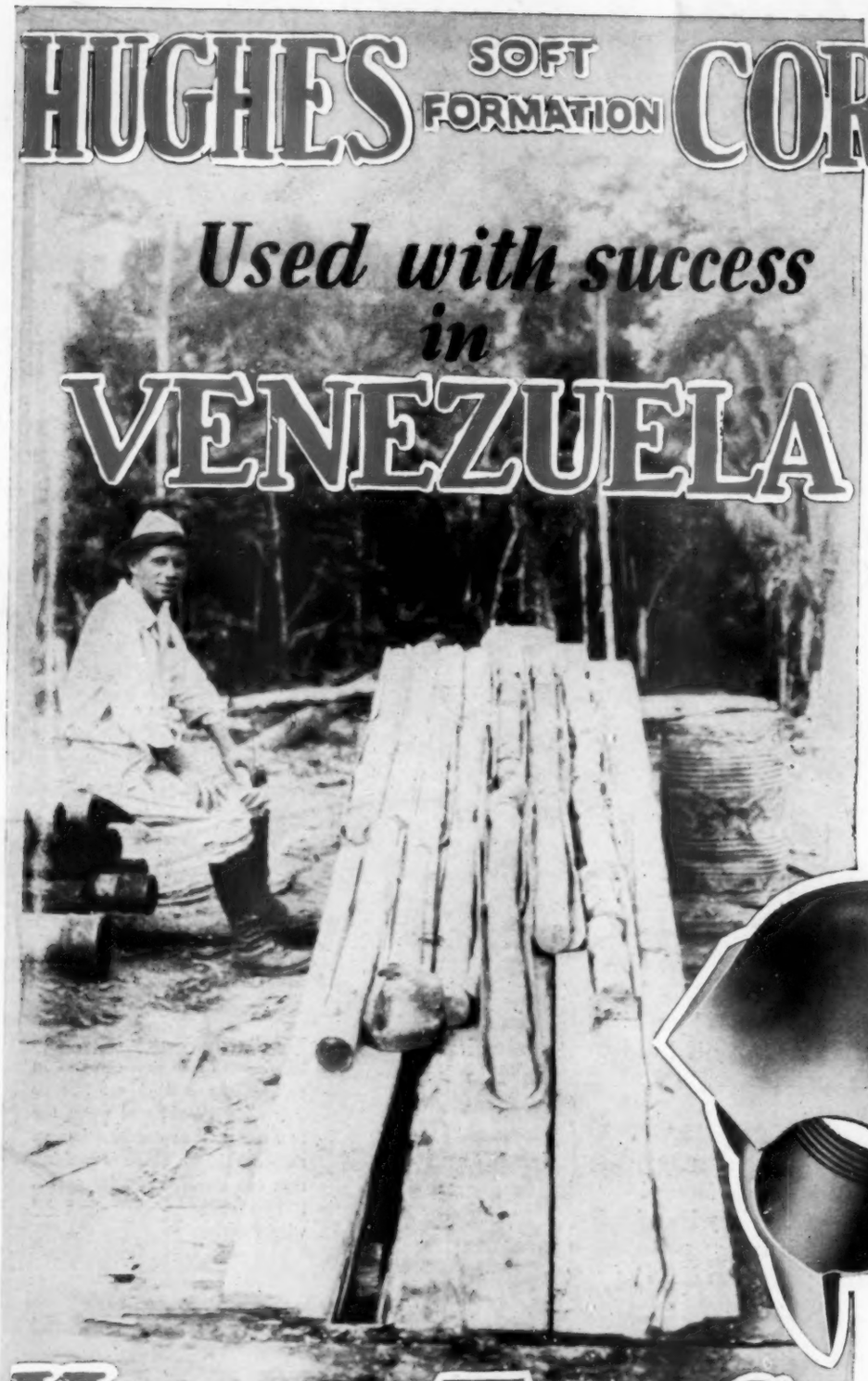
Used with success in VENEZUELA



The uncontaminated cores shown in this picture were taken with a 7⅝" Hughes Soft-Formation Core Bit in the Colon Development Co.'s well, Tara No. 35, in S. W. Venezuela.

The man with the smile is G. H. Murray, Field Geologist for the Colon Development Co.

Formation was Mirador sand stone.

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